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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Progress In Washington
Poetic Justice
All Plastic Home
Prediction
A Blow for Fans
Man Fights Back!
Promoting Longer Lives With Air Conditioning

Stories of the Week

This Texas sheep rancherette was fixin' to dye a lot of dresses purple. One of her lambs, gambolling along the greensward, fell into the tube of purple dye.

Although Gilette Burgess may never have seen a purple cow, a tourist did see that genuine purple lamb. Thereupon he bought it for a pretty price.

"Hm-m-m," thought the rancherette, "this could become a good business." So she dyed other lambs green, cerise, fuchsia, plain fire-engine red . . . and sold them all at high profit.

Matter of fact, she became the biggest lamb dyer in Texas.

Progress In Washington

America's first air conditioned street car is operating, appropriately, in Washington, D. C.

Now if they'll just air condition the taxicabs in our humid nation's capital, George Jones and ARI headquarters might get more visitors.

"In Heaven," informed Rev. Pastor, "there will be no selling or commerce."

"Ugh," muttered Bob Salesman, "Heaven isn't where business in my territory has gone."

Poetic Justice

The American Public Power Association opened its annual convention recently with a series of fiascos which should have happened to a Gas Convention.

First, a light failed on the speakers' podium. The orators squinted at their written texts, and gave up, one after another. (Never did so few please so many.)

Next, exhibitors found the electric power too weak to operate their displayed equipment.

Finally, a radio station engineer, who dropped by to record the speeches, plugged his a.c. equipment into a d.c. socket and blew a fuse to close the show.

All Plastic Home

Your grandchildren may live in a five-room molded plastic house—which won't cost much. Ask the Dow Chemical Co., Monsanto, or Du Pont!

(Concluded on Page 8, Col. 1)

Compressors For Auto A. C. Jump 83%

WASHINGTON, D. C.—Growth in public acceptance of air conditioned automobiles, as reported by manufacturers during the past several months, is reflected in a report just issued by the Air-Conditioning & Refrigeration Institute.

The report shows that manufacturers' shipments of compressor bodies designed for automobile air conditioning use were more than 83% higher during the first four months of 1957 than they were for the same period of 1956.

Actual figures were 210,312 bodies shipped during the first third of 1957, against 114,620 for the same four months of last year. April shipments of com-

(Concluded on Page 23, Col. 1)

DA, BBB Probe Repair Cheating In Philadelphia

PHILADELPHIA—An investigation of alleged appliance repair racketeering is being conducted here by the Better Business Bureau and District Attorney Victor H. Blanc's staff.

The probe reportedly is the result of numerous complaints of over-charges and stalling tactics by some repair firms, and charges for repairs or parts that were under factory guarantee.

Only a small percentage of the industry appears to be indulging in the practices under investigation, according to George W. Connor, BBB chief investigator.

Connor said complaints on air conditioner repairs have been coming in heavier in recent months. Repairs on refrigerators, washers, and other major appliances also have come under fire, he stated.

It was reported that a num-

(Concluded on Page 23, Col. 5)

No Break Seen

So. Calif. Strike In Fourth Week

LOS ANGELES—The air conditioning and sheet metal industry remained shut down for the fourth week of strike conditions involving three unions in Los Angeles, Orange, Riverside, and San Bernardino counties.

Employer representatives claimed union representatives cancelled two meeting attempts, one for last Thursday, another for Friday. The Federal mediator was reported not available now until Tuesday.

Only 372 sheet metal workers are now employed during the strike, out of a reported 6,600 involved, according to employer representatives. Those working are connected with 50 shops normally employing one, two, or three men. Two member shops started operations, one of them normally employing 25 to 30 men.

Employer representatives have been serving a temporary restraining order on shops now operating. The order designates

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Schoemann Explains Changes In UA's National Construction Agreement

WASHINGTON, D. C.—An explanation of some of the new provisions in the United Association's "National Construction Agreement" for national contractors was offered recently by Peter T. Schoemann, president.

"Local unions and national contractors alike will find that we have come up with the fairest and most workable agreement ever yet negotiated," Schoemann declared.

The National Association of Plumbing Contractors, however, at its convention in June adopted a resolution denouncing the national agreement and sent

(Concluded on Page 23, Col. 2)

Cooling Off

President, Pedestrians, Parakeet

That haven of cheerful optimism—the St. Louis weather bureau—has finally given in and purchased air conditioners for its offices. Too hot? Nooo. Officials now have to remain on duty at night. If they left the windows open, the lights would attract insects. (That's what the man said!)

* * *

Mayor Rosenblatt of Omaha will soon be a cool customer. The city is planning to buy him an air conditioned, four-door sedan —for official business, of course.

* * *

Socialites at fashionable Newport, R. I., look upon air conditioning as Yul Brynner does on a pocket comb, we hear. "Most even tempered climate in the East," they claim. But *nobody* has air conditioning.

So, the story goes in Washington, D. C., Mamie Eisenhower arched some high class eyebrows when she asked for air conditioning in the com-

(Concluded on Page 4, Col. 3)

Heating Section . . .

HOW SHOULD YOU determine the air pattern of an oil burner nozzle in the field? For the answer to this and many other questions about oil burner nozzles see the Heating Section. . . .

. . . Next Week

West Penn Cooler Sales Zoom In June

GREENSBURG, Pa. — West Penn Power Co. dealers' sales report for the month of June shows room cooler sales up approximately 50% over last June's sales.

Totals reported by dealers in the area WPPC serves were 970 for June, 1957, and 657 for June, 1956. Totals for the year to date were also up: 1,140 were sold in the first six months of 1956 and 1,451 in the like period this year.

In dehumidifiers, sales figures showed 126 reported for June, 1957, against 50 for June, 1956. The total for the first six months was 264 this year and 94 to date last year.

June sales in home freezers were 502 for this year; 398 in 1956. The first-six-month's sales amounted to 2,110 in 1956 and 2,058 in 1957.

(Concluded on Page 23, Col. 3)

Hotpoint Buys 770-Acre Site Near Chicago

First New Plant To Make Compressors

CHICAGO—Hotpoint Co. last week announced the purchase of a 770-acre tract of industrial property in Elk Grove, Ill., northwest of O'Hare International Airport.

According to John C. Sharp, president, this is the largest single industrial property ever purchased by one manufacturer in the greater Chicago area.

In announcing the Hotpoint purchase, Sharp said the company will construct a new refrigerator compressor plant on the site in the near future that will initially employ from 300 to 500 persons. Pilot production is scheduled for early 1959.

Sharp said other plants and buildings are in the planning stage and that step-by-step additions to meet increased market

(Concluded on Back Page, Col. 4)

Carter Named to Kelvinator Post

DETROIT—Don H. Carter has been named manager of Kelvinator's commercial division, according to Homer L. Travis, vice president in charge of sales for Kelvinator Div.

D. H. Carter

He will succeed H. C. "Pat" Patterson, who has announced his retirement, effective July 31.

Of Carter's 27 years with Kelvinator, 20 years have been with the ice cream cabinet division. For the past 12 years he has been manager of ice cream cabinet sales, which is a part of the company's commercial division.

The commercial division includes ice cream cabinets, frozen food and ice cream merchandisers, water and beverage coolers, reserve storage cabinets, commercial compressors, and condensing units.

(Concluded on Page 23, Col. 5)

Packers, Food Chains Hit Stumbling Blocks

WASHINGTON, D. C.—The efforts of three large meat packers to free themselves from provisions of a 1920 consent decree that prohibits them from entering the retail food field are running into increased opposition here.

So is an attempt by some large food chains to be considered meat packers in order to escape Federal Trade Com-

(Concluded on Page 23, Col. 4)

Many Old, New Exhibitors Sign Up

1958 Western Exhibit and Conference Scheduled for May 7-11 In Los Angeles

LOS ANGELES — The Western Air Conditioning Industries Association has announced that it will hold a 1958 Exhibit and Conference, scheduled for May 7-11, 1958, in the Shrine Exposition Hall in Los Angeles.

The first "Western Air Conditioning, Heating, Ventilating and Refrigeration Exhibit and Conference" was held this past May at Shrine Exposition hall.

Arthur J. Hess, Western Air Conditioning Industries Association president, said that the group was pleased with the high quality of attendance at the first Exhibit and Conference, and Hess said that "the need for such a show in the rapidly growing Western market was recognized and was served by this initial venture."

With the growing importance of education in industry, Hess emphasized that the 1958 program will have more technical sessions.

Fred J. Tabery has again been appointed to serve as exhibit manager for the 1958 affair. He reports that a large percentage of exhibitors who participated in 1957 have reserved their space, in addition to approximately 40 new exhibitors.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

Airtemp Plant, Office To Be Closed Aug. 5-16

DAYTON—Plant and main offices here of Airtemp Div., Chrysler Corp., will be closed from Aug. 5 through Aug. 16, and since emergency parts shipments only will be made from the plant in that period, Airtemp officials are urging distributors to get their orders in to the plant early the week of July 29.

In a plant vacation schedule published previously, it was stated that regular shipments would be made during the vacation period, but this was incorrect, and distributors are urged to correct their plans and enter their orders immediately to insure shipment before the plant closes down.

Newly-Created Post of Chief Engineer At ARI Goes to Prof. Frederick J. Reed

WASHINGTON, D. C. — Appointment of Frederick J. Reed, professor of mechanical engineering at Duke university and chairman of the Standards Committee of the American Society of Refrigerating Engineers, to the newly-created post of chief engineer of the Air-Conditioning & Refrigeration Institute was announced by Geo. S. Jones, Jr., ARI managing director.

F. J. Reed

"Increasing activities in the many technical areas, involving standards, proposed compliance programs, and similar fields, led the ARI board of directors recently to direct enlargement of the institute's engineering department in line with the more important part it is playing, and will play in the future, in industry-wide projects," Jones said.

"We have gone over the field of air conditioning and refrigeration engineers thoroughly since the decision was made to expand the department," he added, "and we believe that we have chosen an outstanding man as well as an accomplished engineer to head the department by which ARI will be identified in technical field."

Reed reported at ARI headquarters here on July 15 to take over the new position.

Joe H. Bergheim, who has been technical secretary of the ARI for the past two years, will remain in that post, heading one area of the enlarged engineering department's over-all operation, Jones said.

Prof. Reed was graduated from Stevens Institute of Technology with the degree of mechanical engineer in 1926. The same year he joined Westinghouse Electric Corp. as an engineer, at the same time continuing his graduate work.

In 1931 he was awarded a M.S. degree in mechanical engineering by the University of Pittsburgh, and in the fall went to Vanderbilt university, Nashville, Tenn., as an instructor in mechanical engineering.

Reed left Vanderbilt in 1935 to join the mechanical engineering department at Duke, and remained at the Durham school through the past school years, progressing from instructor to assistant professor, associate professor, and finally to a full professorship.

In addition to his eminence as an educator, Reed has been active in the affairs of the ASRE for more than two decades. He was chairman of the society's Education Committee for two years, was a section director for three years, and for the past five years has been regional director. He was named chairman of the ASRE Standards Committee in 1956, and again this year, having served as vice-chairman prior to 1956 and as a member of the committee for several years previous.

NLRB Rules Against Separate Union for Appliance Servicemen

WASHINGTON, D. C. — The National Labor Relations Board recently dismissed a petition filed by Local 1440, International Brotherhood of Electrical Workers, AFL-CIO, ruling that a unit limited to appliance servicemen at Sears Roebuck & Co. in Bloomington, Ill. is inappropriate.

"There is no evidence that the appliance servicemen are skilled technicians or craftsmen," the board said. "Moreover, the record does not establish that the duties and the interests of the appliance service are separate and distinct from those of the other store employes or that the appliance servicemen comprise a functionally distinct department."

KRAMER

COIL and BAFFLE Combinations in all STOCK SIZES

for IMMEDIATE DELIVERY!

TRIPLE TROUGH BAFFLES

The addition of a third trough — a unique Kramer feature — permits the use of a deeper primary trough and reduces the dripping to a minimum, making the baffle practically drip-proof.

SPECIAL BAFFLE FINISH FOR LONG LIFE

Non-corrosive metal with special finish remains attractive for the life of the cooler.

EASY INSTALLATION

Baffles shipped completely assembled — takes minimum installation time.

TEMPERATURE LEVEL

For average refrigerator temperatures, 35°F and higher, normal air defrosting can be used. For temperatures between 35° and 32°F, a time clock must be used to insure positive defrost.

WRITE FOR BULLETIN CB-276-A

KRAMER TRENTON CO. • Trenton 5, N.J.

43 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

For more information about products advertised on this page use Information Center, page 18.

Royal Oak Imposes Demand Charges on Water-Cooled Air Conditioning Equipment

ROYAL OAK, Mich. — The City of Royal Oak has recently imposed demand charges of up to $8 per ton on water-using air conditioning equipment not equipped with water-conservation devices.

The new charges are the same as those imposed by the city of Detroit, which supplies Royal Oak with its water.

"Detroit bills its charges to the South Oakland Water Authority which passes them on to Royal Oak," Alan Hertler, Royal Oak city attorney explained. "We are just passing the charges on to the consumer."

Added as an amendment to the city's air conditioning ordinance, which was adopted last year, the demand charges are made on the following schedule:

For equipment installed after May 1, 1956—$8 per ton of refrigeration.

For equipment installed before May 1, 1956—$1.60 per ton this year, $3.20 per ton in 1958, $4.80 per ton in 1959, $6.40 per ton in 1960, and $8 per ton in 1961 and thereafter.

New equipment installed before July 1 will pay the full charge for that year. The charge for equipment installed during July wil be $6, during August $4, during September $2, and after September no charge for that calendar year.

Field Tests 'Very Satisfactory'

Mobile 'Missile Cooler' Takes Over Til Take-Off Time

DAYTON—A new type mobile "missile cooler" to keep a missile cool until a few minutes before take-off has been field tested with very satisfactory results, Airtemp Construction Div. of Chrysler Corp. has recently announced.

The cooler was designed by the division's Philadelphia engineering staff working in collaboration with the Waggoner Heating and Air Conditioning Co. of Hagerstown, Md.

A modified version of an Airtemp standard 5-hp. air-cooled mobile conditioner—the cooler produces 400 c.f.m. of 60° air at 8-in. external static pressure with outside design conditions varying from 115° to 60° F.

Large duct on top of unit circulates 800 c.f.m. of air within the cooler itself. 400 c.f.m. of outside air is continuously taken in.

Four air discharge openings are located at the front of the unit.

They are linked with the missile by lengths of flexible hose which are disconnected shortly before firing time.

NLRB Ruling Hits Union Membership as Condition for Hiring

NEW ORLEANS — Another local of the United Association and a New Orleans contractor group were recently ordered by the National Labor Relations Board to stop requiring employes to join, maintain their membership in, or to secure referrals from the local as a condition of employment, except as permitted by the National Labor Relations Act.

The board ordered UA's local 60 and the Employing Master Plumbing, Heating, Piping, and Refrigeration Contractors of New Orleans and Vicinity to pay more than $32,000 to 12 men who were discriminated against by such a provision in the labor contract between the local and the employers.

This is one in a series of decisions the NLRB has made knocking out contract provisions requiring membership in local as condition of employment.

Westinghouse Names Yoxsimer As Head At East Springfield

EAST SPRINGFIELD, Mass. —Appointment of O. H. Yoxsimer as manager of the Westinghouse East Springfield appliance plant with responsibility for all aspects of the operation including engineering, production, and sales, was announced by John W. Craig, vice president of Westinghouse Electric Corp. and general manager of the Electric Appliance Divs.

Yoxsimer

Yoxsimer has been manager of the refrigerator-freezer engineering department at the Westinghouse plant in Columbus.

Craig said the appointment would initiate establishment at East Springfield of an organization parallel to that in the other Westinghouse appliance plants at Columbus and Mansfield.

J. R. Weaver, manager of manufacturing and engineering since 1953, who first joined Westinghouse 42 years ago, is retiring. Craig said Weaver will serve as a consultant.

H. F. Hildreth, a veteran Westinghouse executive, is appointed assistant to the new manager. H. R. Bryant, who has been involved in sales and sales executive activities with Westinghouse appliances for the past 12 years, will be administrative assistant to Yoxsimer.

W. B. Massenburg continues as assistant manager of the portable appliance division, under Yoxsimer. He will also have full responsibility to S. J. Stephenson, manager of the portable appliance division in Mansfield, for coordination of functions of those portable appliances made in Springfield.

T. W. Ernst Heads Coil Manufacturers

DETROIT—T. W. Ernst, manager, Coil Sales Dept., The Trane Co., has been named president of the Heating & Cooling Coil Manufacturers Association for 1957-58, it was revealed here.

Ernst, a member of the association for four years, said, "Our over-all objective during the coming year will be to secure industry-wide recognition of the testing and coil rating code developed by HCCMA.

Background for DEPENDABILITY

You'll find a new reflection behind long famous Brunner Condensing Units.

It's a reflection of the recently acquired prestige in joining Dunham-Bush . . . supplier of a complete line of dependable air conditioning, refrigeration and heating products.

It's a reflection of the ever available Brunner *and* Dunham-Bush sales engineer. He's near-by your town to help you solve problems . . . prevent problems. And remember, he represents not one but *three* great industries, air conditioning, refrigeration and heating.

This dual dependability is your assurance of even better Brunner products.

BRUNNER DIVISION
DUNHAM-BUSH, INC.
UTICA, NEW YORK

BRUNNER SINCE 1906

Gov. Harriman Seeks Legislation

'Phony' Bargains, Fraudulent Sales To Be Subject of Albany Conference

ALBANY, N. Y. — A statewide conference on proposed New York State legislation to curb "phony" bargains and fraudulent sales has been called by Governor Harriman for Oct. 2 in Albany.

The governor explained that he regarded a "phony" bargain as one in which false statements were made, including professed reductions from fictitious manufacturers' prices.

"An increasing technique of using undue pressure is becoming prevalent," he added. "Existing legislation isn't tight enough to deal with it.

"We need new legislation to protect both the consumer and the legitimate merchant who offers true bargains. The Albany conference will be open to everybody interested, including consumers, merchants, manufacturers, and others."

The governor also stressed the importance of new state legislation, effective Oct. 1, bringing all instalment purchases of consumer goods under state regulation.

"Among its most important features are the full disclosure required from merchants of the cash price, the full time-sale price and other details of instalment contracts, and the limits placed on charges," he said.

Cooling Off: *Sightseers . . . Sailors . . . Supervisors*

(Concluded from Page 1, Col. 3)

mandant's house at the Navy Base in Narragansett Bay—right around the corner from Newport—before she and the President arrive for their vacation.

And why not? The president lives and works in an air conditioned White House, rides to the airport in an air conditioned limousine, flies to Gettysburg in a pre-cooled airplane, and rides to his farm in another air conditioned automobile.

* * *

Sightseers in Washington, D. C. can now ride from the Capitol to the White House in an air conditioned trolley. The "Silver Sightseer" is claimed to be the first air conditioned street car in the world.

* * *

Pedestrians in Kokomo, Ind. paraded down "the world's first air conditioned public sidewalk" during the city's "Fair Weather Days" promotion last month. An 18-ft. wide stretch of walk extending about half the length of the city's largest department store was cooled by a Carrier self-contained unit that spilled dehumidified air over the heads of window shoppers. A wooden framework overlaid with polyethylene film and topped by multi-colored aluminum panels segregated the air conditioned area.

* * *

Grand River Chevrolet in Detroit recently offered a free Frigidaire room air conditioner with every 1957 Chevrolet purchased.

* * *

When Mrs. Beatrice DeLaney of Traverse City, Mich. opened her refrigerator one morning, out flew her pet parakeet. The shivering bird had apparently flown into the refrigerator unnoticed the day before.

* * *

An air conditioned factory, 60 ft. under solid rock, has been built near Stockholm by a Swedish manufacturer of television sets, optical goods, and industrial gases. This is the first privately owned Swedish concern to build underground—just in case somebody can't aim those hydrogen bombs so good.

* * *

An August heat wave should bring a brisk business to the Milwaukee Athletic Club. By then, all of its 110 sleeping rooms will be air conditioned (by Downey Heating Co.), completing the air conditioning of all of the club's eight floors.

* * *

Air conditioning is one of five topics a U. S. sailor can safely discuss when visiting an Arab home, according to the Navy's list of helpful hints to seaman visiting the Middle East. Not on the list is a sailor's favorite topic—women.

* * *

Eight hundred supervisory personnel of Ethyl Corp.'s Baton Rouge plant were housed in 14 air conditioned Pullman cars at the plant to maintain production while striking union members walked a picket line in 95° heat.

Aluminum Price Boost Considered by Big 3

NEW YORK CITY—A general rise in aluminum prices is believed to be in the immediate offing, due to a boost in wages to go into effect in the aluminum-making industry Aug. 1 under a three-year agreement entered into by the industry last year.

Other than to say that the price boost is under consideration, the three major producers of aluminum, Aluminum Co. of America, Reynolds Metals Co., and Kaiser Aluminum & Chemical Co., would not comment.

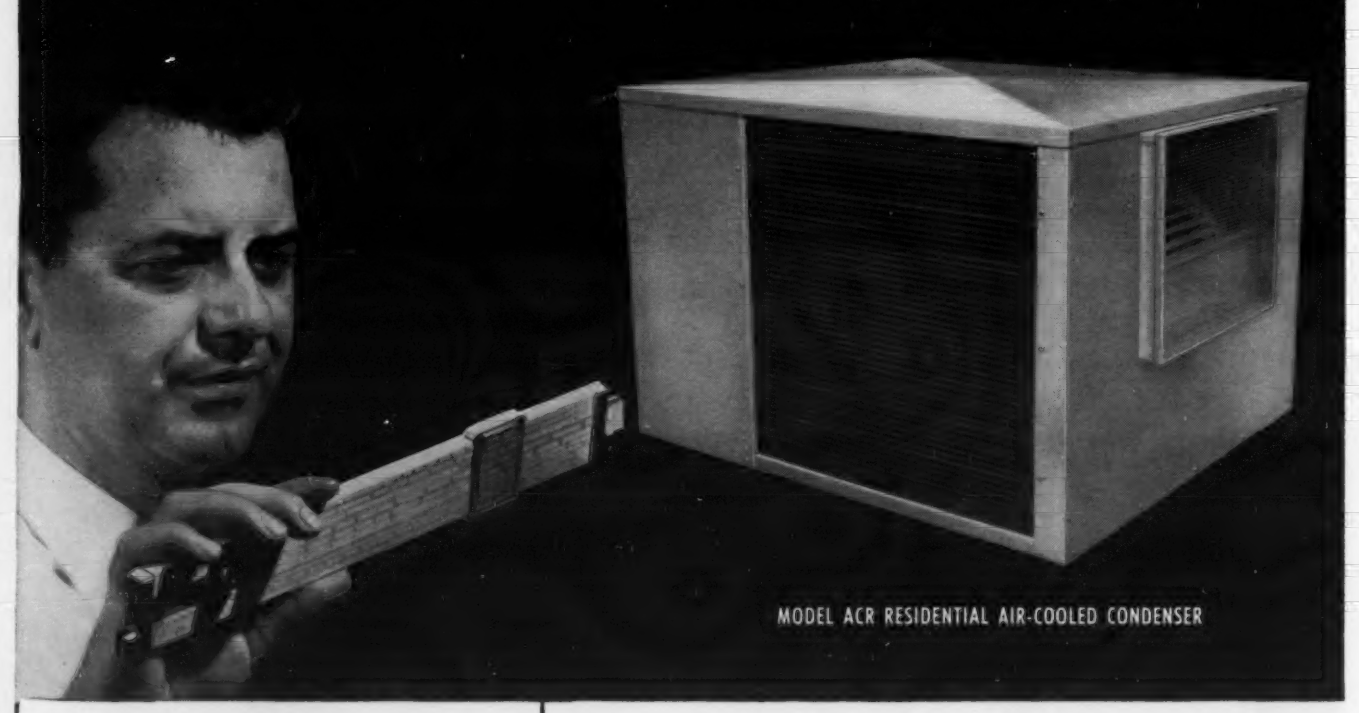
It is thought that the increase may amount to about a cent a pound for pig aluminum, the raw material, bringing the price to 26 cents a pound, or 4% above the present price of 25 cents a pound. Fabricated products, sheet strip, and extruded products are expected to be advanced about 4% also.

Gibson To Hike Prices

GRAND RAPIDS, Mich. — Gibson Refrigerator Co., Div. of Hupp Corp., will have higher prices on its 1958 line of appliances, due to increased steel prices, Sol Sweet, executive vice president, said. He added that there were no plans for raising the costs on the 1957 line.

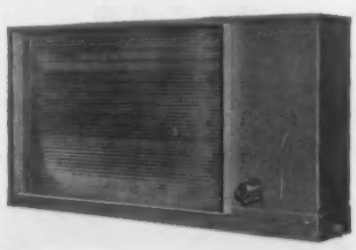
SO HALSTEAD & MITCHELL ENGINEERS SAID . . .

TURBU-FLO GIVES RESERVE CAPACITY* TO H & M RESIDENTIAL AIR-COOLED CONDENSERS



MODEL ACR RESIDENTIAL AIR-COOLED CONDENSER

MODEL VR COOLING COIL—In matching capacities, type VR cooling coils in attractive, insulated housings are compact in size and designed for installation in the furnace plenum.



MODEL HR COOLING COIL—Where headroom above furnace outlet is limited, type HR cooling coils are ideal for installation in horizontal, supply ductwork.

***Up to 15% More at the Condenser Assures Required BTUH at the Evaporator**

Halstead & Mitchell air-cooled condensers for residential air conditioning have oversize coils with exclusive Turbu-Flo fin design. The embossed, streamline pattern provides better "air wash" which reduces air film resistance and improves heat transfer by up to 15%. This built-in reserve assures peak efficiency and rated condenser capacity even on high ambient days.

Model ACR Condensers include a centrifugal blower for quiet handling of large air volume, heavy duty motor—all compactly arranged within a handsome, weatherproofed cabinet.

Space is provided within the cabinet for the installation of compressor, receiver and controls to make a complete air-cooled condensing unit. Any style compressor can be mounted within the condenser. Available for use with Refrigerants -12 or -22, in 2, 3 and 5-ton sizes. Call your Halstead & Mitchell Wholesaler for delivery and price information or write *Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.*

HM Halstead & Mitchell

Look AT PAGE 16 FOR 2 BIG HASTINGS MONEY MAKERS

For more information about products advertised on this page use Information Center, page 18.

Room Unit Sales Not So Seasonal

Survey of Little Rock Distributors Shows Conditioner Volume Shows Signs of Breaking Ties with Hot Weather

LITTLE ROCK, Ark. — This year sales of room air conditioners do not seem to be tied so closely to the weather and there are signs of breaking away from the pattern of previous years, according to a survey of local distributors. The survey was conducted early in July by the Little Rock *Gazette*.

DEALERS CLEAN OUT INITIAL INVENTORIES

Although a heat wave could be expected to send a flood of customers into the room air conditioner dealers' stores, some distributors reported that dealers had cleaned out initial inventories and were depending on wholesalers to keep their stocks rounded out.

General Electric Appliance Co. here indicated business "has been better than last year and the prospect is good" for the rest of the season. It is expected there will still be a demand for repeat business even if the saturation point is met. However, only a small part of the potential market has been reached.

A local distributor reported "We have sold more units this year than in any comparable period in the past and we do not feel that we have hit the peak. A few hot nights would send customers flocking to stores."

100% ABOVE LAST YEAR

Another distributor said "Our units have had a good yearly sales record and we are now about 100% above the total for the same period last year. Some models that were in heavy demand have been sold out and we are unable to obtain them. A couple of weeks of hot weather would clean out the stocks of some of our dealers."

It was further stated by still another distributor that "The trend this year has been toward bigger units and many of our sales have been second and even third units. The market is just beginning to expand."

One outlet said "We still have not reached the point where people are willing to buy air conditioners in the winter but are making some progress in that direction. When this happens the installation crews will have time to provide the kind of service the business should have. Hot weather still throws the installation crews behind schedule and we think this would happen again if the temperature should shoot up suddenly."

Stating that there is a definite trend toward larger units, the newspaper quoted one distributor as saying that the demand for the ¾-hp. unit "has almost disappeared and people are going up to 2-ton sizes."

Carrier Distributor Conducts 'Crash' Room Unit Campaign

ATLANTIC CITY, N. J.—A "crash program" on Carrier room air conditioners was recently conducted by Pierce-Phelps, Inc., Philadelphia distributor. The program called for 40 large-size dealer listing advertisements and 800 radio spots in a two-week period.

According to John T. O'Brien, divisional sales manager for Pierce - Phelps, metropolitan Philadelphia newspapers as well as suburban weekly publications stressed the Carrier "power cooling" story to consumers.

Room Unit Sales Rise In Florida Power Area

MIAMI, Fla. — The Florida Power & Light Co. reported a rise in air conditioner sales for the month of April in its area.

The utility said unit sales to retail dealers in the area, as reported by wholesalers, totaled 3,467, compared with 2,628 for April, 1956. Air conditioner sales for the first four months of 1957 amounted to 13,751, against 8,499 for the same period during 1956.

Included in these figures are sales by department and chain stores and some retailers who purchase their merchandise from sources other than state wholesalers, it was noted.

Household refrigerators also showed a substantial increase during the period. April sales were 4,327, topping last April's figure of 2,548. The totals for the first four months were shown as 19,952 this year and 15,978 in 1956.

Lewyt Announces Free Training for Building Superintendents, Engineers

LONG ISLAND CITY, N. Y. —Apartment house superintendents and engineers can now learn about the maintenance of Lewyt air conditioners.

The Lewyt Air Conditioner Corp. announced that it has started a free training program at its Long Island City plant for superintendents and engineers serving buildings in which Lewyt built-in wall air conditioners have been installed.

Classes will be conducted every Tuesday evening, beginning at six o'clock, for an indefinite period. Instructors will be company engineers and service personnel. In addition to class room study of cooling units, the superintendents will have an opportunity to see the machines as they are assembled on the manufacturer's production line.

Lewyt plans to extend the training program to other markets across the country next spring. Engineers will tour cities in which the company is represented with its built-in units.

Lewyt said it believes every apartment house superintendent should know how to maintain an air conditioner, just as he knows how to maintain an oil burner or other multi-story dwelling equipment.

For Your Reprint Copy
"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

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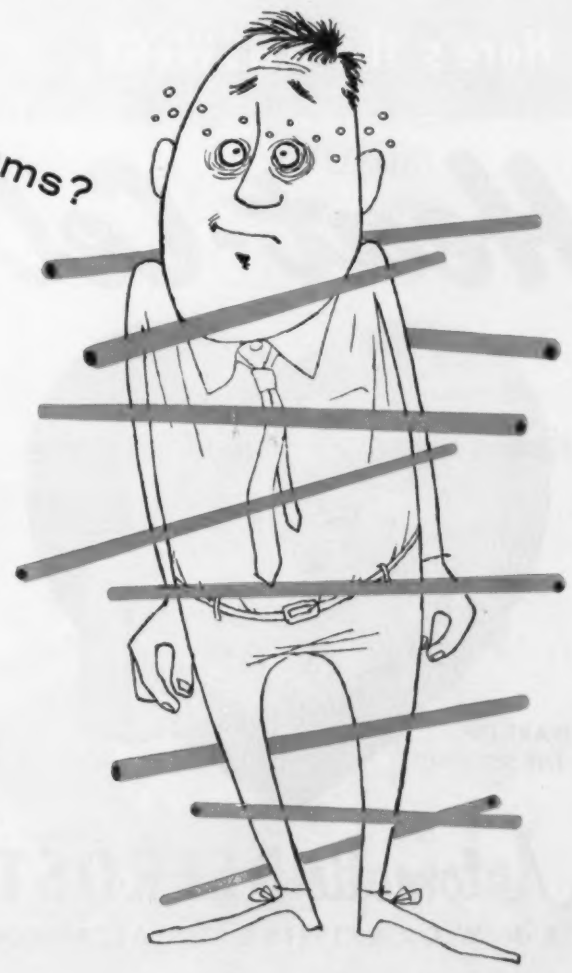

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HANDLING FROZEN MEATS

Restaurateurs Advised To: Hold Temperatures at 0° F. or Lower; Avoid Thawing, Refreezing; and Minimize Temperature Fluctuations

CHICAGO — Some authoritative advice on the proper handling of frozen meats was offered to restaurateurs recently by C. K. Wiesman, technical director of the foods division of Armour & Co.

"Proper handling of frozen meats," he declared, "depends on:

"1. Holding product at 0° F. or lower.

"2. Minimizing fluctuations in storage temperatures.

"3. Avoiding thawing and refreezing.

"4. Educating the user as to proper storage and preparation of frozen foods in the restaurant."

Wiesman offered his advice in an interview with J. J. Ruffley, associate director of food and equipment research for the National Restaurant Association.

A portion of that interview, which appeared in the May issue of *National Restaurant News,* follows:

Precautions

Q. Are there any precautions to be observed in restaurant store rooms?

A. Frozen meat products should not be permitted to be kept in the store rooms at elevated temperatures before being removed to suitable freezer storage.

Many suppliers and restaurant operators are becoming aware of this problem and are making provisions for adequate handling of frozen products.

Thawing, Refreezing Draws Controversy

Q. Is the thawing and refreezing of frozen meats permissible?

A. This is rather a controversial problem.

A paper by Wm. L. Sulzbacher concludes: ". . . there is no scientific basis for the commonly held belief that frozen meat becomes more perishable after thawing than fresh meat. However, the possibility that long periods of freezer storage may give different results should be investigated."

Professor P. Thomas Ziegler of Pennsylvania State university, in a private communication states in part, "Refreezing meat does not materially affect its quality. This does not mean that one should become careless but it suggests that it is needless to become panicky about using all the meat in a package that has been thawed, if it is more than is needed for that meal. Rewrap it, refreeze it, and use it at another time."

Q. Hasn't it been stated that thawing and refreezing permits the plentiful growth of spoilage bacteria?

A. Research in our own company indicates that the thawing and refreezing of meat which is in good bacteriological condition will do it no harm; the refreezing of meat which is on the verge of spoilage will do it very little good.

The big objection to thawing and refreezing arises from the fact that during thawing and subsequent holding before refreezing, the meat is subject to microbial attack.

And if conditions during this period are not properly controlled, the resulting product may be adversely affected.

Nutritional Value Can Be Lost In Thawing

Another point which must be kept in mind is that during thawing it is to be expected that the meat will lose some of its nutritional value through loss of vitamins, minerals, and soluble proteins in the juices.

We believe it is poor practice to permit the thawing and refreezing of meat and that it should be avoided insofar as it is practically possible.

Q. We have been discussing raw or uncooked meat? What happens with pre-cooked meats?

A. Here, in the thawing and refreezing of pre-cooked frozen meats, the problem is somewhat more complicated and serious. Therefore, when considering the problem as a whole, one must conclude that from the standpoint of proper handling of frozen meats the handlers all along the way should be educated to avoid thawing and refreezing.

Table 1—Storage Life of Frozen Meats at Various Temperatures

	10° F.	0° F.	-10° F.	-20° F.
Beef	4 mos.	6 mos.	1 yr.	1 yr. plus
Lamb	3 mos.	6 mos.	1 yr.	1 yr. plus
Veal	3 mos.	4 mos.	8 mos.	1 yr.
Pork	2 mos.	4 mos.	8 mos.	10 mos.

Table 2—Storage Life of Frozen Processed Meats at Various Temperatures

	10° F.	0° F.	-10° F.	-20° F.
Chopped beef	3 mos.	6 mos.	8 mos.	10 mos.
Pork sausage	1 mo.	2 mos.	3 mos.	4 mos.
Smoked ham and bacon	1 mo.	2 mos.	3 mos.	4 mos.
Green ham and bacon	2 mos.	4 mos.	6 mos.	6 mos.

Does Flavor Deteriorate During Storage?

Q. Does flavor deteriorate during storage?

A. Aside from bacteriological problems, we are concerned with the retention of quality of frozen meats during the required storage period.

By this quality we are referring to such factors as appearance, that is, color, freezer burn, etc., and flavor. By flavor we are referring to the development of rancidity, hydrolysis, denaturization of proteins and dryness.

The variability of foods and the ability of individuals to detect flavors as well as differences of individuals as to what constitutes a desirable flavor make generalizations in keeping the product of uncertain value.

Storage Life of Frozen Meats

Q. What is the storage life of frozen meats?

A. Some time ago we prepared some data on the storage life of frozen meats at certain temperatures and we feel that this data holds true today. Table No. 1 lists the storage life of frozen meats.

Q. Can hamburger be stored frozen?

A. Ground meats such as hamburger have lower storage life than any of the above listed.

Storage Life of Processed Meats

Q. What is the storage life of processed meat products?

A. Processed products such as pork sausage, smoked bacon, and smoked ham are unstable in the frozen state, while green hams and bacon hold up fairly well. Table No. 2 gives the average storage life limits for these products.

Optimum temperatures and conditions for specific products must be established, Wiesman stated. For example, frozen pork cannot be held longer than 4 months at 8° to 10° F. without development of rancidity or freezer burn. While 10° F. is acceptable for some products, frozen pork requires 0° F., according to investigators.

Such items as frozen stews and swiss steaks may also fall in this category, he said.

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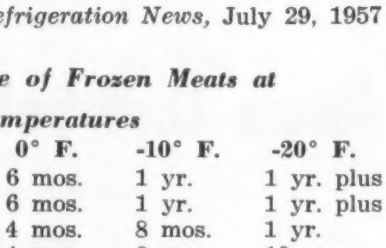

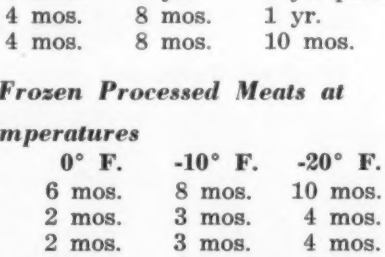

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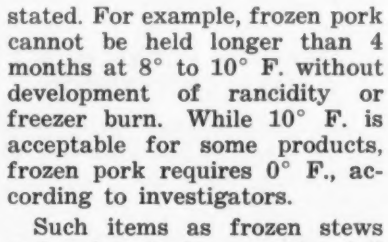

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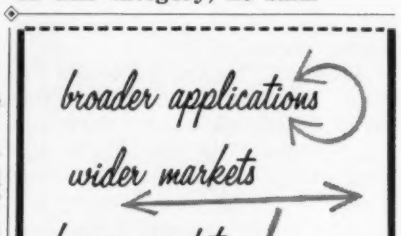

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Look
AT PAGE 16
FOR 2 BIG HASTINGS MONEY MAKERS

Refrigeration Ups Chip Steak Output

24-In. Frozen Meat Logs Are Sliced Into Steaks To Get 10 Times More Production with Only 3 More Workers

PORTLAND, Ore. — Tossing all of the traditional production methods out of the window and switching instead to a unique system of refrigeration has brought about a sizeable increase in chip steak sales for Willison's Chip Steak, Inc.

The Willison's organization supplies top-quality chip steaks throughout some 20 states for both retail store sales and institutions.

There are only two products, which include 2-oz. chip steaks and 4-oz. cube steaks. The chip steaks account easily for 80% of the total sales volume.

When Willison's originally entered the chip steak market, reports production manager Jack F. Knutsen, the traditional methods of grinding, mixing, and processing top-quality beef were used. The steaks were formed by hand, wrapped in wax paper, packaged in cartons, and stored at -10° until sold.

Turned to Refrigeration For Faster Production

This type of hand operation, however, was too slow to meet the sharp increase in demand which the Oregon firm was experiencing. Consequently, Knutsen turned to refrigeration to provide some faster method of automatic production.

After much experimentation which required more than a year, Knutsen came up with the solution in "frozen meat logs" which have made it possible to produce 10 times as much with only three more employes.

Under the plan, fine grade A beef is chopped fine through standard grinders, and after inspection the meat, at room temperature, is compressed into hollow stainless steel metal molds, 24 in. long and slightly under 5 in. in diameter.

The ground meat, packed under pressure, is then frozen within the mold in an immersion dip tank, which has a freezing capacity of one ton an hour, using a Vilter two-stage ammonia refrigeration system designed and installed by Western Engineers, Inc. of Portland. The metal molds, supported on hanger rods, average from 45 minutes to an hour in the sub-zero temperature brine and on removal produce a "meat log" 15 lbs. in weight.

After removal from the cylindrical molds, the meat logs are transferred to one of two twin cooling rooms, at a temperature of 30°, preparatory to entering the slicing room.

Steaks Wrapped Semi-Automatically

In this department, Willison's has installed six U. S. slicing machines each with a capacity of 800 chip steaks per hour. As the chip steaks are sliced from the log, they are semi-automatically wrapped between sheets of bacteria-free waxed paper.

Each of the wrappers, which were designed and copyrighted by Phil H. Willison, president of the firm, gives instructions, printed in vegetable ink which has no effect on the meat.

Willison's has been using this double-wrapping "instruction sheet" since mid-1953, and finds that the innovation has been highly valuable from an advertising standpoint.

30° Is Ideal for Slicing

Because all of the chip steaks are sliced from the meat log when it is at the ideal 30° temperature, cleaner, neater cuts are made, there is less wear on the cutting blades of the slicer, which would come with hard-frozen meat, and the product can be more easily handled by the automatic packaging machine, Knutsen pointed out.

The chip steaks are packed in cartons which contain the same cooking directions on the exterior which appears on the double wrapper separating sheets inside. All cartons are overwrapped in cellophane and stored at -10°.

Storage and Processing Plant Recently Built

Recently completing a new refrigerated plant, the Willison firm has built a 100 by 100-ft., 2-story steel-inforced concrete building, which provides a 4,000-sq. ft. processing room, two walk-in coolers, three low temperature refrigerated storage rooms, plus offices.

Transported by two 40-ft. sub-zero refrigerated highway trucks, the chip steaks are delivered to refrigerated storage centers in Houston, El Paso, and Amarillo, Texas; Phoenix and Tucson, Ariz.; Los Angeles; and Seattle and Spokane, Wash. An inventory of upwards of $10,000 in chip steaks is maintained at each point, with a sales crew at each center.

This system has resulted in volume rising by more than 1,000% over its level 10 years ago, according to Knutsen.

Another unusual touch which Willison's has developed concerns the exhausting of air from the polyethylene bags.

In this case, President Willison found that an ordinary vacuum cleaner could be adapted to suck all of the air out of the interior of the polyethylene bag just before freezing, and that combination of semi-vacuum and -10° cold resulted in a much more durable cube steak.

Punxsutawney Names Robert Miller As Chief Engineer

PUNXSUTAWNEY, Pa. — H. L. Buffington, president of the Punxsutawney Co., announces the appointment of Robert Miller as chief engineer.

Robert Miller

Engaged in air conditioning and refrigeration design for over 20 years, Miller heads-up the company's new product development program.

"He will be directly concerned with expansion of present "Beverage-Air' cooler lines to meet the increasing demand for these products throughout the dairy and carbonated beverage fields," it was stated.

Miller's appointment "coincides with plans to produce a much wider range of coolers in present and new models—all with automatic condensation disposal units that reduce or eliminate installation costs on self-contained equipment."

Miller came to the Punxsutawney Co. in 1956 from Quiet Heet Mfg. Corp., where he was a senior project engineer on "thin-line" air conditioners. An active ASRE member, he also held engineering positions with Ajax and Servel following the completion of his engineering studies in his home state of Indiana.

Warehouse Planned

NORFOLK, Va.—A new warehouse containing 200,000 sq. ft., including 1,000 sq. ft. of air conditioned office space, will be erected on 47th St. by Lamberts Point Diversified Co., Inc., for lease to the Greyvan Lines, Inc., according to reports.

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Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

Let's look at its prototype, which now is on display in Disneyland. As you push the "omnidirectional plastic dual-lever handle" and stride into this air conditioned home of the future, you may feel as if you are in the piney woods. Why? Because the air conditioning is scented.

Stepping forward to the center of the house, you come to the "visionary kitchen," designed and furnished by Kelvinator. This family food center contains three refrigeration units molded into a plastic wall which overhangs a plastic work counter. One unit is a freezer, another a normal temperature refrigerator, the third a 50° receptacle for irradiated foods. By pushing a selected button, any refrigerator shelf (with cataloged food) slides down for easy access.

Other "new look" items in this dream kitchen include an ultrasonic dishwasher which rolls in or out—again at the push of a button—and collects dishes from the dining room! High-frequency sound waves cleanse the dishes, which then are warm-air dried and stored for future use. (This is an RCA-Whirlpool idea.) Also there's an electronic range which rises up from nowhere when a button is pressed. Hidden behind sliding plastic panels are an automatic clothes washer and dryer. They, too, pop out when needed.

Reason you feel sea breezes in one room, and smell pine needles in another, is that the air conditioning system has been designed to waft heppy odors through pinpricked walls all over the home. Imagine taking a shower and shave in a bathroom amid the scent of roses!

Shaped like a cross, this 1,600-sq. ft. Happy Home perches atop a 16-ft. square block of concrete. The latter stands about head-high, and serves as an above-ground basement. Built of molded plastic reinforced with fibrous glass, living-space sections are so light that two men carried in the whole bathroom (with fixtures molded into place) and erected it on the spot.

Set in an inside wall is a closed-circuit television screen which permits you to view either front-door visitors or telephone callers. (If both appear at the same time, you'll have a crazy, mixed-up screen.) When talking on the telephone, you can roam about from room to room. Concealed microphones will pick up your conversation, AND your visage.

This we view with alarm!

Otherwise, things look pretty rosy for the home equipment dealer come 1960.

Prediction

Following the lead of commercial refrigerator manufacturers, next year many household refrigerators will come equipped with inside lock-releases.

To protect venturesome children, of course. . . .

A Blow for Fans

Note to TV fight announcers:

More than half your viewers don't know the scrappers' names and couldn't pronounce them if they did. The only way they can tell adversaries apart is by their shorts. Many fans of both sexes make parlor bets—and their bets are on "white pants" or on "black pants."

By the time a decision is screamed raucously through the mike, both fighters have their robes on. The winner's name is announced, but the color of the pants isn't.

Couldn't you please, Mr. Fight Announcer, satisfy a great family desire by identifying the color of the guy's pants when you lift his arm in victory? You might sell more beer if you did. (Lou Maxon, Ted Little, *et al* please note.)

Man Fights Back!

Great news from California. Richfield Oil Corp. attempted to convert the servicing of its 300,000 credit customers from human clerks to an "electronic brain." Result: all fouled up.

Seems that dealers stuck the bill cards on spindles before mailing them back. These extra holes confused the IBM machines to the point of utter consternation.

All is not lost, men! Machines haven't taken over—yet.

Promoting Longer Lives With Air Conditioning

In an editorial entitled: "On Staying Alive Through Heat Waves," the *Detroit News* averred:

"Detroiters have dripped and drooped through the first heat wave of the year. The remarkable thing about the hot spell was that not a single prostration was reported. Fifteen or 20 years ago a comparable period of sultriness would have jammed the emergency wards of Receiving and Wayne County General hospitals.

"Health Commissioner Molner thinks the reason people get along with the heat better is that they have become more sensible. When the temperatures and humidity readings climb, they wear lighter clothing.

"Air conditioning is a boon within the reach of many more people than formerly. (Detroit dealers got so many orders for room coolers during the heat wave that they don't know when they will be able to fill all of them.)

"According to weather experts, we are in for a cycle of torrid temperatures. The more we adapt ourselves to this Torrid Future, the healthier and happier we will be when even worse sizzlers come along."

Good news for air conditioning specialists!

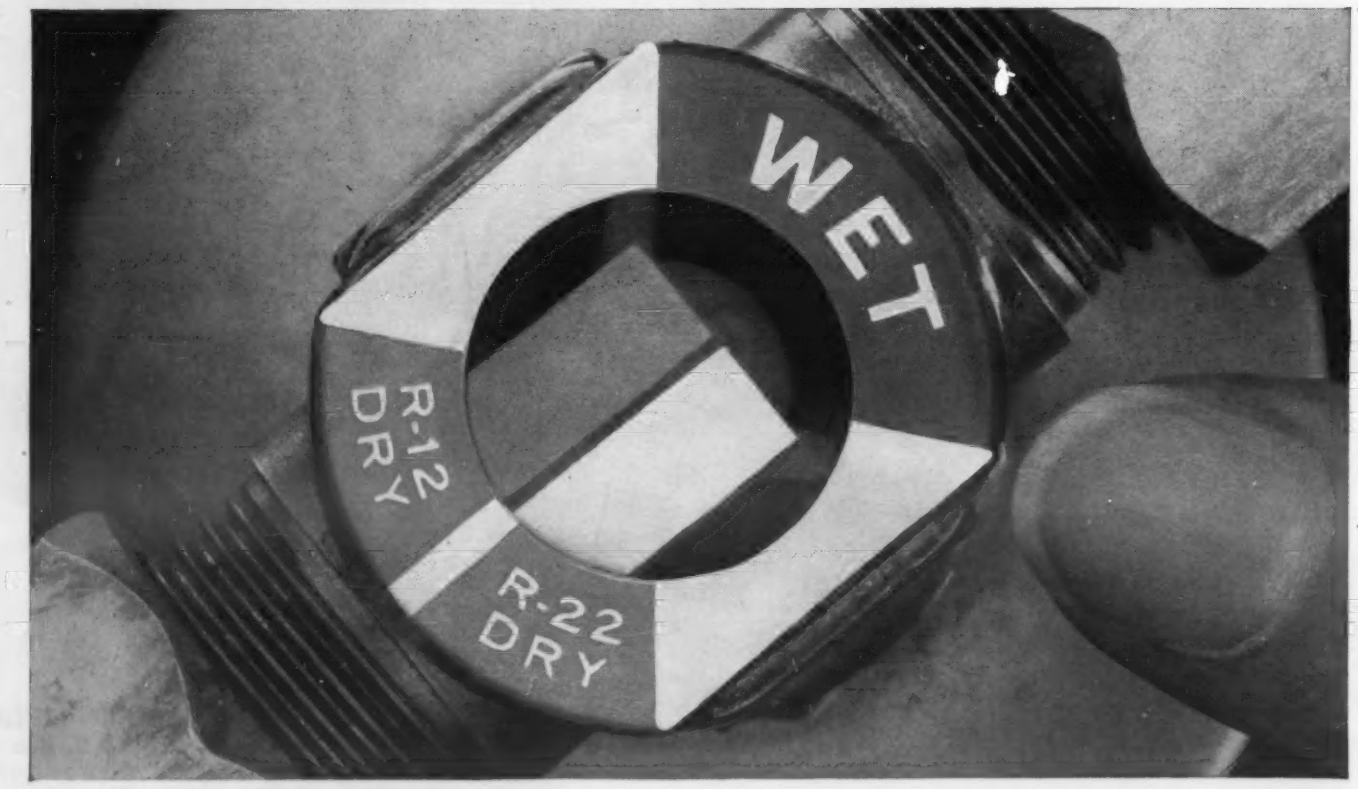
Trane Expands Service Network

LA CROSSE, Wis. — The Trane Co. service agency network across the country has been expanded to include 36 centers, Trane Vice President A. C. Menke revealed.

Latest service organization has been established at Trane's Cincinnati regional office with Robert A. Huff as service engineer. Huff has 12 years of experience in air conditioning. R. A. Matheis is office manager.

IT'S HERE!

The world's first moisture indicator with a built-in sight glass. The new ANSUL SUPER DRY-EYE tells you at a glance if the refrigerant is dry or dangerously wet, and lets you see the condition of the refrigerant. Here are the four big servicing questions the super DRY-EYE answers for you scientifically!



Q. If I am using Freon-12 how will I know if it is dangerously wet or dry?

A. Just look through the big window at the R-12 indicating element. If it is blue the refrigerant is safe; less than 10 parts per million of moisture present. If it is pink, moisture has climbed above 30 ppm—time to change driers.

Q. If I use Freon-22 in a system how will I know if it is wet or dry?

A. If the R-22 element is green your refrigerant is in safe operating condition—less than 20 ppm of moisture. If the element shows pink, moisture has reached the 25 ppm level; time to change driers and avert a costly breakdown.

Q. Will the Super Dry-Eye tell me if there is a low refrigerant charge?

A. Yes. The fused glass window, the first proven *leak-proof sight glass* in the industry, permits visual inspection of the refrigerant at all times. Bubbles indicate a low refrigerant charge or a possible restriction in the line.

Q. Is there a simple, economical way of correcting the problems which the Super Dry-Eye tells me about?

A. The T-fitting which houses the Super Dry-Eye can also serve as a connection for an Ansul T-Flo drier without an additional break in the line. The drier screws in like a light bulb and hand tightening gives a leak-proof seal.

The Ansul Chemical Company, Marinette, Wisconsin

ANSUL

Look AT PAGE 16 FOR 2 BIG HASTINGS MONEY MAKERS

For more information about products advertised on this page use Information Center, page 18.

in the new NORGE

more beauty – *plus convenience and usable space*

more efficiency – *with REYNOLDS ALUMINUM TUBED SHEET One-Side-Flat EVAPORATORS*✶ (patent pending)

Norge Model S-107

✶ fabricated and finished by

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How NORGE uses Tubed Sheet One-Side-Flat to Gain Flexibility, Economy and Selling Features

The handsome 10′ and 13′ Norge super-deluxe refrigerators are value packed . . . and one of their exciting features is evaporators made of Reynolds Aluminum Tubed Sheet *One-Side-Flat*. Here are some of the reasons why Norge selected evaporators made of this revolutionary material that is flat on one side and has the *built-in* heat transfer passageways on the other side.

Better Performance—More Consumer Selling Features With Tubed Sheet One-Side-Flat Evaporators

- Flat surfaces make it easier to defrost, improve drainage of water and other liquids, permit faster and easier and more thorough cleaning.
- Flat surfaces permit small jars, bottles, cans and other containers to rest on smooth surface without wobbling or tipping, thus reducing possibility of spillage.
- Flat surfaces aid in faster freezing by permitting direct contact with food packages, ice cube trays and other items to cooling passages in top, bottom and sides of freezer chest. Excellent heat transfer by conduction is assured and insulating air spaces are eliminated.
- Flat surfaces mean no high points to concentrate wear on critical tube surfaces.

New Flexibility In Design

- Reynolds Tubed Sheet *One-Side-Flat* is the only sheet with one flat side providing integral tubing in any parallel or *non-parallel* patterns no matter how complex. Almost any tubing pattern that can be drawn can be quickly and economically produced in Tubed Sheet with practically unlimited circuiting possibilities. Passageways can be flat or oval; large or small; spaced close together or apart. Redesigns are simplified, can be made quicker.

Greater Economy

- Metal formerly used for evaporator tubing, accumulators and receivers is eliminated. Many connecting and assembly operations are eliminated. Additional tubing lengths add nothing to cost. Redesigning costs are much less.

More Attractive Product

- Can be embossed in a decorative pattern or left smooth. Can be color anodized in any color desired to match color-styled refrigerator and freezer interiors.

For details on Tubed Sheet One-Side-Flat, contact your nearest Reynolds Offices or write to address below.

Tubed Sheet *One-Side-Flat* refrigerator evaporator. Note pattern on one side, other side smooth.

"We believe our choice of Reynolds Aluminum Tubed Sheet One-Side-Flat evaporators gives us the maximum in circuit design flexibility and gives buyers of Norge Refrigerators the fastest freezing evaporators possible."

Mr. Harley Whitmore
Director of Engineering on Norge Refrigerators
Muskegon Heights, Michigan

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Factors for Heat Pump Design, Development, Sales Growth

Need Plastic Coils In Water-to-Air Unit, Proper Refrigerant Metering

Forum Sees Rosy Future For Heat Pump; Low Cost Electricity Is Needed

MIAMI BEACH, Fla.—Some of the factors that may be involved in the future design, development, and sales growth of reverse cycle (heat pump) air conditioning systems were brought forward at one of the forums held at the annual meeting of ASRE here.

In these forums, the members speak freely on any phase of the subject, and there is no mention made of any individual in any report on the forum.

Some of the major points developed in the discussion of the heat pump were the following:

MAJOR POINTS

1. The need for coils of plastic construction for the water-to-air type heat pump, and the possibilities of obtaining such products in the near future.

2. Importance of proper refrigerant metering devices, to provide correct operating pressures and conditions in the heating cycle, and proper balance in the system at all times.

3. Cost of electric current, and the role it may play in the sales growth of the heat pump.

Subject of plastic coils may have been emphasized because of the presence of so many Floridians at the forum. The water-to-air heat pump probably attained its greatest popularity in the state of Florida.

A problem with heat exchangers of plastic construction is in obtaining a sufficient rate of heat transfer. Some form of agitation or ebullition of the liquid phase of the refrigerant might be an answer to this, it was suggested.

Refrigerant metering or valving devices designed specifically for heat pump systems are important, a forum participant asserted, because of the special problems of pressure-temperature relationships in reverse cycle systems.

WINTER OPERATION

For example, the "evaporator" side of the cycle must literally be operated "colder" in the winter than in the summer, in order that the operating temperatures be such that the maximum heat effect will be realized on the reverse side of the system.

A generall rosy future for the heat pump was predicted by some of the participants, a number of whom sell and install heat pumps. "One of our problems has been getting enough units," said one.

Another forum participant declared that costs should inevitably come down "since there will be an increase in the production of air conditioning components, which are heat pump components."

A utility representative said that a 2-cent kwh. rate should make the heat pump competitive from the standpoint of operating costs with all but the lowest cost natural gas.

Full Packaged Unit Line Offered For Use with Remote Condensers

LA CROSSE, Wis.—A complete line of package type air conditioners for use with remote air-cooled condensers has been announced by the Trane Co.

The conditioners are available in 3, 5, 7½, 10, and 15-hp. capacities, the manufacturer announced.

Used with dry type condensers, the cooling units are suitable for areas where water is scarce or where local ordinances restrict the use of water for air conditioning, the company explained.

Furnished with capped connections for the discharge and liquid lines, the 3, 5, and 7½-hp. sizes use a single Trane air-cooled condenser. Larger capacity 10 and 15-hp. units are equipped for use with twin remote condenser models, the manufacturer further pointed out.

Features of the new conditioner line are low decibel and economical operation, compact construction, electronically balanced fans, high-capacity coils, isolated compressor section, and quick, efficient condensate drainage, it was added.

Leland C. Ginn Dies

DALLAS — Leland C. Ginn, branch manager for the Coleman Co., died recently after a brief illness. Ginn was 41. He joined Coleman in 1954 as assistant to the general sales manager and came here in May as branch manager, it was explained.

LARKIN AIR COOLED CONDENSER

The acid test of any product is performance. That's why you will find Larkin products used so widely for so many different refrigeration and air-conditioning applications. Users know from past experience that they can count on Larkin for top performance — day in, day out — year in, year out.

•

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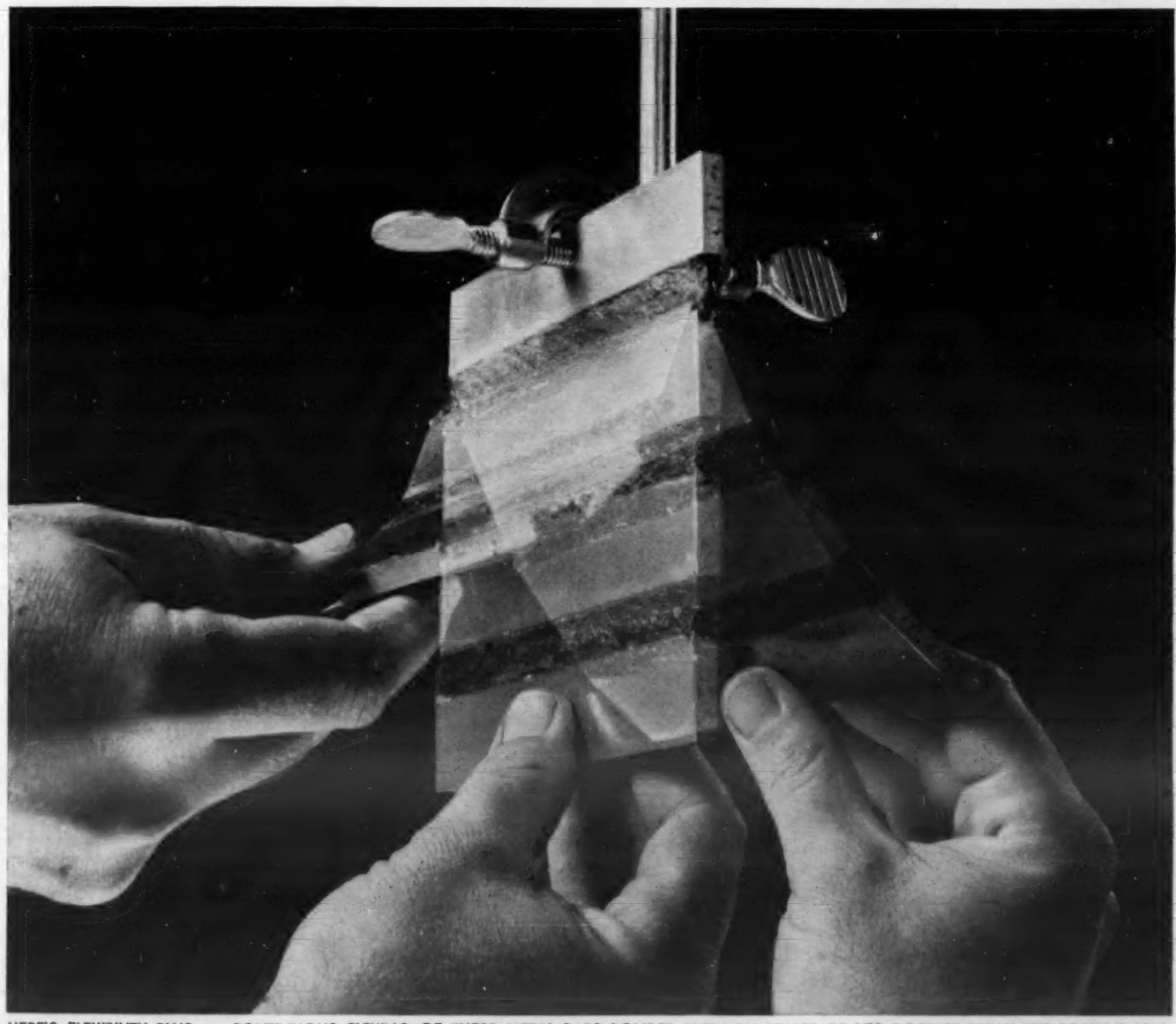

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Top performance in air conditioners requires that moisture stay where it belongs . . . and durable, moisture-tight 3M Sealer EC-373 sees to that!

The lasting, flexible seal of EC-373 is unimpaired by vibration, high or low temperatures. Its positive adhesion to metal makes a seal vibration can't break . . . that won't become brittle in temperatures low as −25°F. . . . won't soften even at temperatures as high as +250°F.

When EC-373 seals inside compartments, water can't seep from one to another—or out onto the floor. It seals exterior cabinets so that moist air can't get inside. Freeze-ups are prevented. Insulation keeps dry. Apply EC-373 fast and easily by pressure gun, flow gun, hand caulking gun, brush or spatula.

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For more information about products advertised on this page use Information Center, page 18.

Edwards

CO-AXIAL FREON CONDENSERS

-- give high efficiency, counter flow performance with these outstanding advantages:

- *Use 35% less water*
- *Cost savings of 30% to 40%*
- *½ to 7½ ton sizes from stock— LARGER capacities also available*
- *No internal joints*
- *Easy installation*
- *Many compact shapes*

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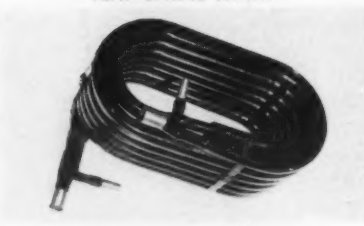

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Bendix Evansville Div. Announces First Authorized Wholesaler List

EVANSVILLE, Ind.—Donald J. Wood, general sales manager for the Evansville Div., Bendix-Westinghouse Automotive Air Brake Co., has announced the first group of authorized Bendix-Westinghouse hermetic motor compressor and condensing unit wholesalers appointed. They are:

Abco Refrigeration Supply Co., Hicksville, L. I., N. Y., New York City; Air Cold Sales Co., Los Angeles; Airo Supply Co., Inc., Chicago; Allied Electric Appliance Parts, Inc., Trenton, N. J., Warminster and Philadelphia.; Appliance Engineering Corp., Boston; The Bodwell Co., Harrisburg, Pa.; B & W Supply Co., Portland, Ore.; Baker's, Inc. of Savannah, Savannah, Ga.; Bowen Refrigeration Supplies, Inc., Charlotte, N. C., Atlanta; Budlock Refrigeration Supply Co., Inc., Birmingham, Ala., Evansville, Ind., Memphis; Leo S. Bosarge Co., Inc., Atlanta.

The Capson Co., Inc., Brooklyn; Central Supply Co., Indianapolis, Fort Wayne, Ind.; James B. Clow & Sons, Inc., Chicago; Cobe & Foster, Inc., Manchester, N. H.; N. W. Day Supply Co., Hartford, Conn.; Debes Refrigeration Supply Co., Cleveland; Electro-Mechanical Products, Inc., Gary, Ind.; Ed's Supply Co., Nashville, Tenn.; Enochs Sales Co., Mobile, Ala. and New Orleans; Fleck Bros., Ltd., Vancouver, B. C., Can.; Frigitemp Corp., Brooklyn.

General Refrigeration Supply Co., Lafayette, Ind.; Graves Bros. Refrigeration Supplies, Inc., Tampa, Fla.; Greenberg Supply Co., Inc., Wilmington, Del.; Hasco, Inc., Durham, Fayetteville, Greensboro, Winston-Salem, S. C.; Jordan Supply Co., Inc., Buffalo; Louisville Mill Supply Co., Louisville, Ky.; M & M Refrigeration Supply Co., El Paso, Texas; Marine Electric Co., San Francisco; Marshall Refrigeration Co., Ltd., Hamilton and Toronto Ont., Montreal, Que., Can.; L. E. Minns & Co., Houston, Texas; Mutual Supply Co., Long Beach, Calif.; Mutual Mfg. & Supply Co., Cincinnati.

Noehle Refrigeration Supply Co., Rochester, N. Y.; Noland Co., Inc., Jacksonville, Fla.; F. F. Osmon Co., Washington, Ind.; Orlando Refrigeration Supply, Inc., Orlando, Fla.; Wm. M. Orr Co., Inc., Pittsburgh; Palmer Supply Co., Tulsa, Okla; Peglars, Inc., Chattanooga, Tenn.; Phillips Refrigeration Supplies, San Diego, Calif.; Polar Supply Co., Peoria, Ill.

R. I. Refrigeration Supply Co., Providence, R. I.; Refrigeration Equipment Co., Topeka and Wichita, Kan., Kansas City, Mo.; Refrigeration & Industrial Supply Co., Minneapolis and St. Paul, Minn.; Refrigeration Suppliers, Inc., Norfolk, Va.; Roche & Hull, Inc., Baltimore, Hagerstown, Salisbury, Md.; Ruegg Supply Co., Omaha, Neb.; R. H. Spangler & Co., St. Louis, Springfield, Ill.

Tesdell Refrigeration Supply Co., Des Moines, Iowa; Tesco Distributors, Newark, N. J.; Thermo Supply, Inc., Denver; Valley Refrigeration Supply Co., San Bernardino, Calif.; Vincent Refrigeration & Heating Co., Milwaukee; Westbrook Co., San Antonio; Young Supply Co., Detroit and Pontiac, Mich.

To handle this fast-growing list of wholesalers, Wood announced the reassignment of the following regional managers to call on these new Bendix-Westinghouse outlets:

Harry Bell, New England states; Ralph Berry, Southeastern states; W. F. Cissell, South Central states; A. K. Johnston, Northwestern states; D. J. Miller, North Central states; Sam C. Moncher, metropolitan New York; C. L. Olin, Southwestern states; J. N. Schnur, Northeastern states; and J. V. Turner, Canada, Southeast.

Government Contracts

SYNOPSIS OF PROPOSED PROCUREMENT

ARMY

QM Purchasing Agency, Columbus General Depot, Columbus 15, Ohio.
DISPLAY CASE, REFRIGERATED—Qty. Various—IFB 16B—Bid Opening 1 Aug. 57.

QM Purchasing Agency, Columbus General Depot, Columbus 15, Ohio.
REFRIGERATOR, MECHANICAL, COMMERCIAL Reach-in Type Mil. Spec. MIL-R-10931C—60 ea.—IFB 58-33B—Bid Opening 16 Aug. 57.
HEATER, DUCT TYPE, portable, gasoline Mil. Spec. MIL-M-11049A—375 Units—IFB 12B—Bid Opening 12 Aug. 57.

NAVY

Yards and Docks Supply Office, Port Hueneme, Calif. Attn.: Purchase Div.
REFRIGERATOR, ELECTRIC, Household—4 Items—IFB 160-7-58 B—Bid Opening 12 Aug. 57.

AIR FORCE

Base Procurement Office, Pinecastle Air Force Base, Fla.
AIR CONDITIONING TO BLDG. 133, Pinecastle AFB, Orlando, Fla.—Job—IFB 08-617-581-1—Bid Opening 14 Aug. 57.

GENERAL SERVICES ADMINISTRATION

General Services Administration, Region 4, Business Service Center, 50 7th St., N.E., Atlanta 23, Ga.
NEW HEATING BOILER, etc., Selma, Ala., Post Office and Court House—Job—IFB CR4-1686—Bid Opening 8-9-'57.
AIR CONDITIONING JURY ROOM, Rome, Ga., Post Office and Court House—Job—IFB CR4-1634A—Bid Opening 8-6-57.

General Services Administration, Design and Construction, Public Bldg. Service, 19th & F Sts., Washington, D. C.
AIR CONDITIONING NURSES HOME (Bldg. No. 2), Hospital Center, U. S. Soldiers Home Grounds, at Washington, D. C. Bidding material available July 23 at Rm. 1304, General Services Bldg., 19th & F Sts., N.W., Washington, D. C., Phone Executive 3-4900, Ext. 2397—Job—IFB 49111—Bid Opening 8-20-57.

General Services Administration, Region 7, Business Service Center, 1114 Commerce, Dallas, Texas.
AIR CONDITIONING COURT ROOM FACILITIES, U. S. Post Office & Court House, Tulsa, Okla.—Job—IFB CR72-465—Bid Opening 8-13-57.
HEATING BOILER REPLACEMENT, U. S. Post Office, Hamburg, Ark.—Job—IFB DC8-7—Bid Opening 8-13-57.
HEATING BOILER REPLACEMENT, U. S. Post Office, Pauls Valley, Okla.—Job—IFB DC8-31—Bid Opening 8-13-57.

Business Service Center, General Services Admin., 620 Post Office and Courthouse, Boston 9, Mass.
RETUBING HEATING BOILER #1, etc., Lawrence, Mass., U. S. Post Office—Job—IFB BOS-58-4—Bid Opening 8-2-57.
INSTALLING ELECTRIC WATER COOLER and Stack Hood replacement, Meriden, Conn., U. S. Post Office—Job—IFB BOS-58-3—Bid Opening 8-2-57.

UCLA Offers Course In Practical Air Conditioning

LOS ANGELES — "Practical Air Conditioning," an accredited engineering course, is announced for fall adult enrollment through University of California Extension.

Howard N. Helfman, vice president of Climate Conditioning, will lecture for 18 weekly sessions starting Sept. 9 at UCLA.

For more information about products advertised on this page use Information Center, page 18.

MEN on the MOVE

Lau Blower Co.—Appointment of EMORY L. MAINOUS, with the firm for 17 years, to the newly-created post of Dayton Div. works manager has been announced.

Air Conditioning Div., Westinghouse Electric Corp.—ROBERT E. HAUBOLD, who has been associated with the division for 11 years, has been named southwestern regional sales manager. He will be responsible for western Tennessee, northern Mississippi, Arkansas, Oklahoma, Texas, and New Mexico with headquarters in Houston, Texas. A. L. McDONALD, JR. has been appointed western regional sales manager to cover western Kentucky, southern Indiana, southern Illinois, Missouri, Kansas, Colorado, and Wyoming with headquarters in St. Louis. He joined the division in 1956.

Heating & Air Conditioning Div., Stewart-Warner Corp. — Appointment of CARL G. LANG as western regional sales manager has been announced. He has been a district sales manager. CARL L. RIDDLE, also a district sales manager, has been appointed eastern regional sales manager.

Mitchell Mfg. Co., Div. of Cory Corp.—WAYNE GIFT has joined the sales staff of the package division as Indiana district manager. He has been a manufacturer's representative.

Mueller Brass Co.—WILLIAM R. CARSON has been named sales representative in the Washington, D. C. office and CHARLES L. TREEND has been assigned to the Dallas office as sales representative after serving with the main plant sales department.

Dunham-Bush, Inc.—DELTON E. HARPER, formerly associated with Joe A. Poole and with H. E. Bovay, Jr. in Houston, Texas, has joined the firm as sales engineer to cover the Houston area. JOHN J. CASTELLO, previously with American-Standard and with Keenan Pipe & Supply Co., Los Angeles, will represent the firm in the Los Angeles area as sales engineer.

American-Standard Plumbing & Heating Div.—HENRY C. PIERCE has been appointed manager of the midwestern sales district with headquarters in Kansas City, Mo. He formerly was manager of the Silver Spring, Md. sales office. JAMES W. HART has been named manager of the sales office in Dallas after serving there on the sales staff since 1955.

Thomas A. Edison Industries Div., McGraw-Edison Co.—ROBERT M. OLIVER, vice president-marketing, has resigned to form his own marketing counseling business headquartered at Phoenix, Ariz.

Reliance Electric & Engineering Co. (Cleveland) — Directors announced creation of three positions in operations and one in marketing. Elected vice presidents—operations groups were WILLIAM R. HOUGH, WALTER H. HABER, and HUGH D. LUKE. RICHARD A. GUEDER was named vice president-marketing. He has been general manager-marketing. Haber is Ashtabula Div. manager, Luke, Ivanhoe Div. manager, and Hough, vice president-engineering and a director.

Neilsen & Moffatt (Los Angeles) —RUSSELL M. RUGGS has been upped from staff to associate status in the firm which specializes in designing and engineering general hospitals and other institutional-type structures. He handles mechanical engineering and supervision of field construction.

Hussmann Refrigerator Co. — FRANK MAY, assistant purchasing agent, has resigned to enter the sales field as manufacturer's representative and will be known as Frank May Co. He will cover Missouri, southern Illinois, and Evansville, Ind. for manufacturers of metal and rubber products.

Refrigeration, Air Conditioning Play Vital Roles In Carnation's Fresh Milk, Ice Cream Plant Which Serves Western Washington

SEATTLE—A new Carnation Co. fresh milk and ice cream plant covering approximately nine acres and having 132,975 sq. ft. of working area under roof, was dedicated here recently, the company announced.

The plant will employ 420 men and women, and is capable of producing 40,000 gals. of milk a day and three million gallons of ice cream a year, both capacities readily expandable.

The two-story main plant contains 111,501 sq. ft. of floor space, of which 7,591 sq. ft. is devoted to ice cream hardening, 5,830 sq. ft. to an ice cream processing room, 8,840 sq. ft. to the milk processing room, 3,280 sq. ft. to a completely tiled, cottage cheese room, equipped with a special air conditioning and filtration system.

MILK REFRIGERATION

A milk refrigeration room contains 3,175 sq. ft., the case and bottle return room contains 8,100 sq. ft., refrigerated raw products occupy 1,070 sq. ft., the mix make-up room contains 2,140 sq. ft., and clean-up-in-place equipment occupies 695 sq. ft.

The first floor warehouse contains 5,040 sq. ft., and the second floor warehouse, 13,746 sq. ft.

A garage building located at the rear of the main plant has a floor area of 14,186 sq. ft. and a mezzanine storage area of 1,980 sq. ft.

Equipment of particular interest includes specially designed tunnels and conveying system which prevent any frost from entering the hardening room, automatic casing for milk cartons, automatic combining and stacking of milk cases, remote control sanitary valves, automatic liquid wax system, centralized chilled water and tower water systems, circulated liquid ammonia refrigeration systems, completely automatic boiler room, and automatic liquid sugar and corn syrup systems for ice cream mix making.

LOADING PLATFORM

The loading platform has a dock level conveyor for loading cased milk into relay vans and wholesale trucks. Both wholesale and retail trucks have their own space and need not be moved after parking at the plant. Empty cases are unloaded and full cases loaded directly from the filler at the permanent locations.

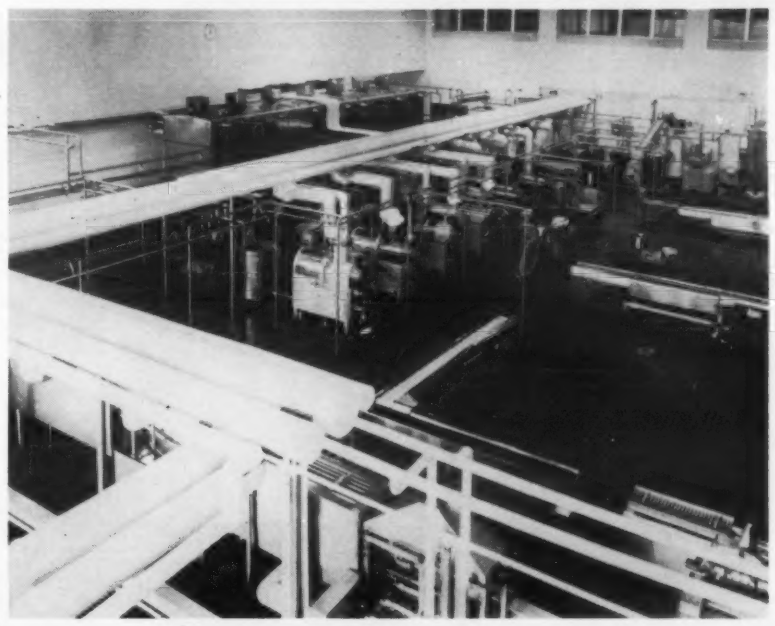
There is a tastefully decorated lunch room for employes and modern locker rooms with exhaust ventilation for the lockers.

Overlooking both the milk and ice cream processing rooms is the second floor "Hostess" room for plant visitors. It has its own kitchen and is presided over by a graduate home economist.

Every conceivable sanitation provision has been built into the new plant serving western Washington, Henry C. Weber, Seattle division general manager, said. All sanitary piping is washed, for example, by an automatic cleaned-in-place washer.

Weber said that the plant has one of the best equipped laboratories for quality control anywhere. The plant's central location in the area and its considerable remote control and automatic devices are additional factors, he said, which assure that it will provide the best quality products and customer service.

All engineering, including drawings and specifications, was handled by Carnation's own engineering department, headed by John Forslew, assistant vice president. The project was coordinated by H. S. Christiansen, assistant chief engineer, Carnation Co. General contractor was J. C. Boespflug Construction Co., of Seattle.

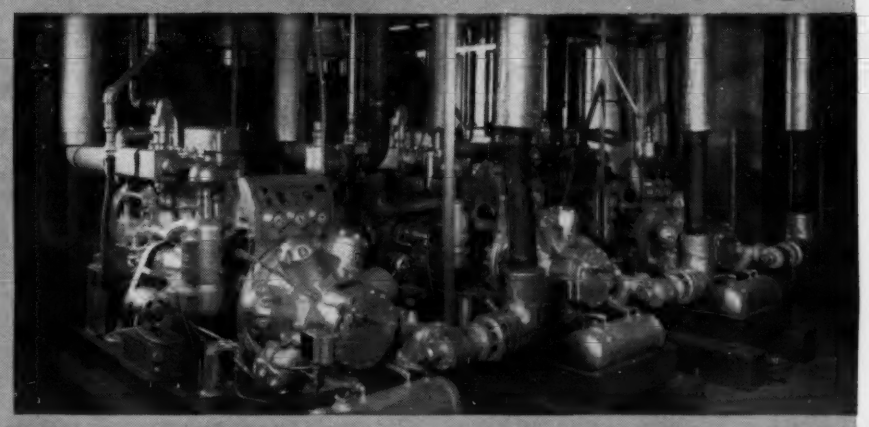


OVER-ALL VIEW of ice cream processing room in the new Carnation Co. plant in Seattle. Refrigeration plays important part in this portion of the plant as well as in the fresh milk production area.

give your customers Ready-Power

NATURAL GAS air conditioning

economical
automatic
dependable



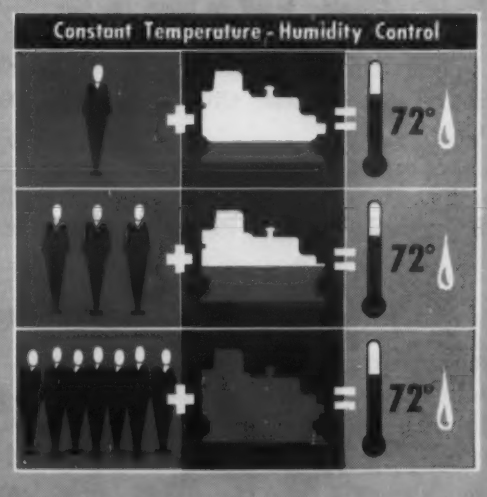
For Office Buildings | For Restaurants | For Churches | For Theaters

Call for Ready-Power Natural Gas Air Conditioning Units and give your customers the advantages of air conditioning at its best. Designed and engineered to operate efficiently on economical natural gas, Ready-Power Air Conditioning Units give controlled summer temperature and humidity at *lowest operating costs known.*

Ready-Power Units feature a unique system of capacity modulation which permits *continuous* operation of the compressor at variable speeds. Cooling rate and power requirements automatically adjust to changing load conditions. Temperature and humidity variations common to "on and off" systems are eliminated. Ideal for theaters, restaurants, motels, hospitals, churches and store and office buildings where latent and heavy sensible loads must be met.

Ready-Power Air Conditioning Units are available up to 76-ton capacity, and many multiple unit installations of more than 150-ton capacity have been operating for years. Units are designed to operate with chiller or direct expansion equipment. Pre-engineered Chiller Packages, available through Ready-Power, simplify and speed installation of complete air conditioning systems.

Complete information is available. Write for it.



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by Jimmy Hatlo

BULLGRAVY GIVES MISCELLA, THE SECRETARY, AN IMPORTANT LETTER AND THESE INSTRUCTIONS AS TO FILING SAME···
FILE THIS UNDER HOT RODS, INC.···VERY IMPORTANT···· I THINK WE'LL BE DOING A LOT OF BUSINESS WITH THIS OUTFIT···
YES, MR. BULLGRAVY···
JIMMY HATLO
3-20
THANX AND A HATLO HAT TIP TO FLOYD HUNTER, CHAPEL HILL, N.C.
SIX MONTHS LATER HE WANTS TO REFER TO IT···· SO HOW DOES HE ASK FOR IT ?
YOU KNOW··· THAT LETTER FROM WHOZIZ···YOU KNOW··· THAT WHATCHAMAYCALLIT OUTFIT···IT WASN'T A LETTER·· I THINK IT WAS A PAMPHLET··· GREEN PAPER, I THINK···NO··· IT WAS WHITE···WHAT'S THE MATTER? DON'T YOU KNOW WHERE YOU FILED IT ?
URGE TO MAIM
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Revolutionary Idea? Women Can Help You Sell

ALL air conditioning and home equipment dealers can increase their volume and profits by employing women to sell their products.

Why? Because women frequently are better at showing homemakers what a product actually will do *in* the home and *for* women than some male salesmen are.

Saleswomen, "in the round," can be depended upon to:

(a) Sell "product-use," rather than nuts and bolts.

(b) Spot chances to sell additional home equipment.

(c) Handle customer complaints beautifully.

(d) Cut down on nuisance service calls.

However, most marketing pundits agree, women should not be put in competition with men on a sales floor. Rather, they should be employed to supplement the efforts of male salesmen.

Otherwise too many men competing with them will quit. Licked!

Selling home equipment is a "natural" for women if they *use* these products themselves and know their value in making housework and home-inhabiting easier.

Women may not be so glib with sales talk (oh, no?); they may not know all the answers about merchandising and buying—but, just give them a chance at telling and showing other women what a good appliance will do, and they'll do a real grand job *of selling to homemakers.*

Male salesmen tend to lean on the "nuts and bolts" story. They're wrapped up in facts about the compressor, the amount and grade of steel used, the coils, etc. And PRICE!

In contrast, the housewife prospect is thinking about how this room air conditioner or home freezer or dishwasher would look in her home, and what it could do for her.

Right down her alley, a good saleswoman will talk to a woman prospect about the appearance and use values of such a product—and give her the kind of information the prospect really wants.

To be sure, every major manufacturer has a staff of trained women who study home equipment, develop new ideas for home usefulness, test every product for convenience; and decide such details as shelf arrangement in refrigerators, rack arrangements in ovens, controls on air conditioners, and suchlike.

So far, so good. But what are dealers doing? Are they hiring salesgirls to contact women-buyers? Unfortunately, few are.

Basic qualifications for a salesgirl: She should be endowed with enthusiasm, loyalty, a desire to work, personality, and the ability to gain the confidence of other women.

In this connection, dealers should be warned against hiring "a Marilyn Monroe with a mink coat." A housewife's reaction to this type of saleswoman would be: "What does that hussy know about washing or cooking?"

After a saleswoman is hired by a dealer she should be given thorough product training, plus an opportunity to *use* the equipment she sells, before she is exposed to doorbells.

Thereafter she'll be a great asset.

Sell a woman on your products, and she'll sell them to prospects with full enthusiasm and complete loyalty.

Make her feel that she's an integral part of your organization, that she's needed—and she will be yours, loyally and profitably.

Never underestimate the power of a woman.

Tips From the Top

An investment counsellor, according to Arthur Little, put out this eye-opening tip at a luncheon.

"There's a sharp little sidelight on a company's management that sometimes shows up in its house organ or other employe literature:

"If the editor calls everybody else John Doe or Jack Spratt, but refers to the Top Men as Mr. Smith, or (worse) Mr. Jones, Jr., then check twice to be sure that top management is not as stuffy as this can indicate.

"It may be a sign only that the Big Brass has overlooked some well-meaning young man's misjudgment. But it may also be a sign that they eat adulation and love apple-polishers. That is not a management we recommend to our investing clients."

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AIR CONDITIONING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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VOLUME 81, NO. 13, SERIAL NO. 1,479, JULY 29, 1957

OFF THE CHEST

PLANS TO CIRCULATE HOSPITAL COOLING STORY

J. Geo. Fischer & Sons, Inc.
Saginaw, Mich.

Editor:

In the June 3 issue of AIR CONDITIONING & REFRIGERATION NEWS there was a wonderfully fine written article on the topic of hospital air conditioning.

I would like to get a number of reprints of this article and the permission to use them for educational purposes only. I have had several arguments with professional engineers, architects, and hospital board members regarding the same points of health brought out so clearly in this article.

I think it is very important to the progress of our industry to keep the above classified people abreast with the dangers of hospital air conditioning and how to design and avoid these dangers in the design of a good and safe system for all concerned.

My plan is to mail one of the reprints along with a personal letter to all professional engineers, architects, air conditioning contractors, and hospital board members throughout the State of Michigan outside of the Detroit area, calling their attention to the importance of reading and studying this article.

FRANK RICHARDS

DEFENSE DEPT. SPEAKER SAYS ARI SWELL AUDIENCE

Office of the
Secretary of Defense
Washington, D. C.

Editor:

Many thanks for your very flattering comments regarding my talk to ARI at Hot Springs. It was a swell audience. I enjoyed giving it and I appreciate your very kind words. I am saving them to reread in my low moments.

I am enclosing my card which you may care to use in self defense on occasion.

JOE POWELL

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Study Re-Emphasizes Conclusion: Below 35° Temperature Better for Most Fresh Food Preservation But Must Be Well Controlled To Halt Freezing

MIAMI BEACH, Fla.—"Methods of improving food preservation in home refrigerators," as studied by C. E. Hummel and E. S. Stoddard of the Research Section of the Hotpoint Co., were reported on in a paper at the recent annual ASRE convention here.

In making the study on methods of improving food preservation, tests were conducted to determine the effects of various storage conditions on the usable storage life of foods in the household refrigerator. Among the methods tried were those utilizing gamma radiation, reduced pressure, and storage temperatures lower than those usually provided by residential type refrigerators.

One of the main results of the study was a re-emphasis of the conclusions of other researchers in the past that the lower the temperatures (35° F. or lower) at which most fresh foods can be held, the better and longer they will keep.

Studies on Gamma Radiation Methods

In the studies on the method using gamma radiation, a storage container was constructed to provide a continuous low level of gamma radiation of about 15 mr/hr for foods stored at normal temperatures.

For lettuce, celery, asparagus, strawberries, and tomatoes stored in the gamma pan the storage life averaged 50% longer than that of the items stored in the standard pan. Bacteriological studies using bacteria and molds isolated from spoiled produce and meats also indicated loss growth of spoilage organisms in the gamma pan.

For example, the growth of the lettuce type organism in the gamma pan was one-half to one two hundredth of that in the standard pan. For the "meat" organism, the growth in the gamma pan was about one-fifth that in the standard in all tests.

Gamma Pan Storage Tops Standard Pan

Expressed in another way, for produce, there are eight chances out of 10 that the food stored in the gamma pan would be better than that stored in the standard pan.

Considerable extension of usable storage life was also obtained by storing produce at a pressure about 4 in. of mercury below atmospheric pressure. This partial evacuation was effected by a small diaphragm pump connected to a tube sealed into the cover of the apparatus. A pressure regulator was set to turn the pump off when the pressure in the container was reduced to about 4 in. Hg less than atmospheric pressure.

When the pressure in the container rose to about 2 in. Hg less than atmospheric pressure, another period of partial evacuation took place. Latching or unlatching the vegetable pan handle also closed or opened a small hole in the pan which permitted sealing or breaking of the vacuum as needed.

Although extremely high humidity was maintained, the periodic partial evacuation of the storage container appeared to provide a controlled evaporation of moisture from the surface of the foods which prevented sliming.

At the usual refrigeration temperature, the weight loss of the product was considerably less than that occurring in the standard pan, and the product remained more crisp.

Store at Temperature Slightly Above Freezing

For lettuce, celery, green beans, tomatoes, and strawberries stored at 42° F., the average storage life of the products in the reduced pressure pan was 55% longer than that of the products in the control pan.

Tests indicated that storage life of many fruits, vegetables, and meats was markedly increased by storage temperature slightly above the freezing point of the product.

In tests with broccoli, corn, lettuce, celery, and peas, a temperature of 40° F. provided an average increase in storage life of 37% over that of the products stored at 45° F. At 35° F., the storage life averages 91% longer than at 45° F.

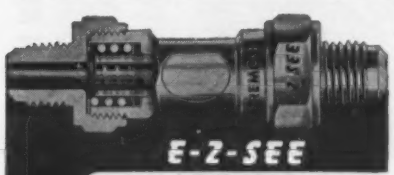
In tests with various prepared meat products, a reduction in storage temperature from 45° F. to 36° F. more than doubled the storage life. Storage at 30° F. more than tripled the storage life of the products.

When there is some factor other than temperature which partially inhibits the metabolic process of the microorganism, said the authors, a relatively small decrease in temperature may then provide the necesssary restraint to hold microbial growth in check. Thus in the case of pickled or partially dehydrated foods, only moderate refrigeration temperatures will provide greatly increased life.

Not Effective If Spoilage Progresses

On the other hand, when spoilage has progressed to a certain point on a product such as weiners, the usual refrigeration temperatures will not be effective in preventing sliming. This is due in part to the relatively high microbial population prior to refrigeration, and partly because of the more favorable environment present in a product that has undergone spoilage.

The authors pointed out that while the 35° F. or lower storage temperatures provide good storage for many products, they must be well controlled to prevent freezing of produce items.



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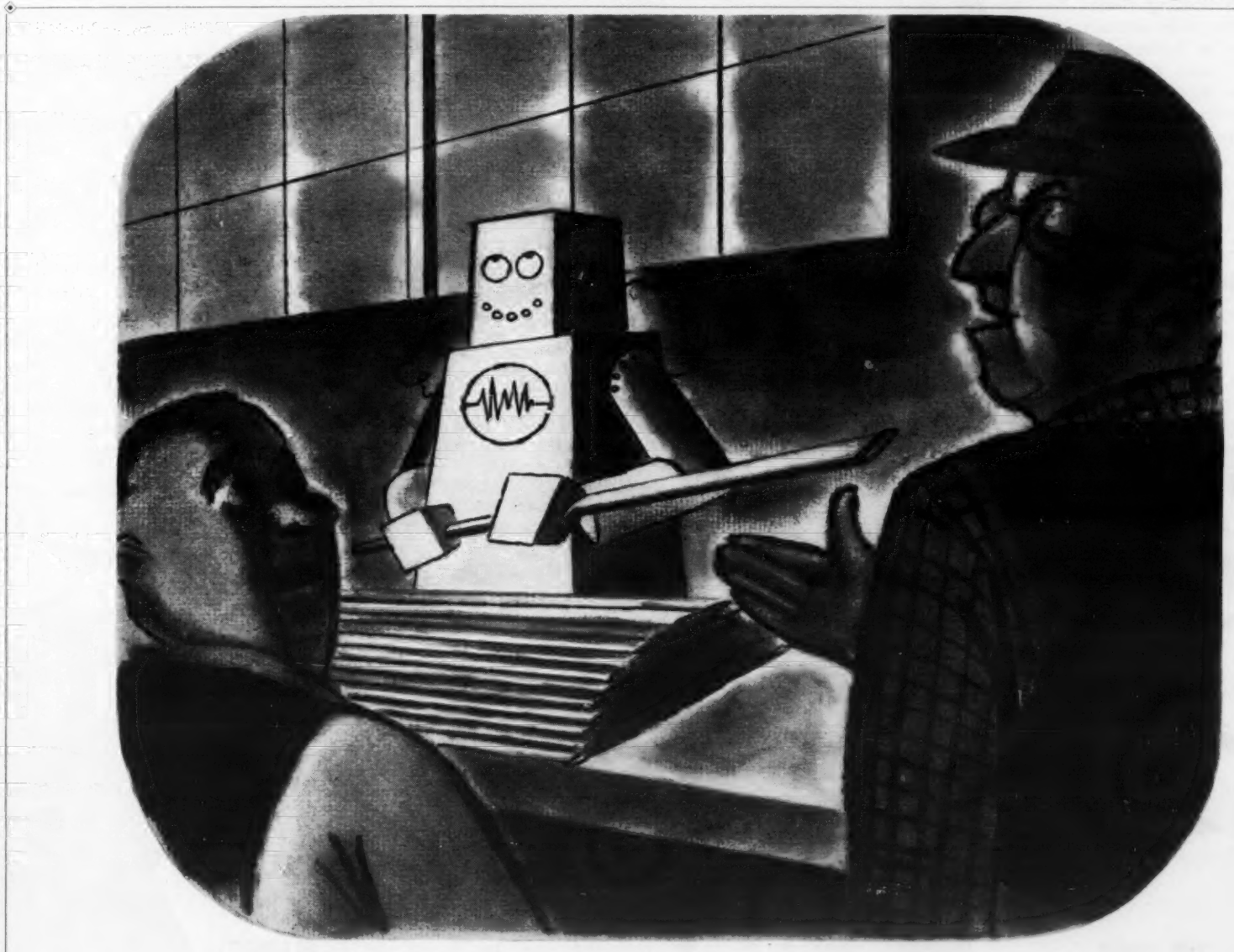

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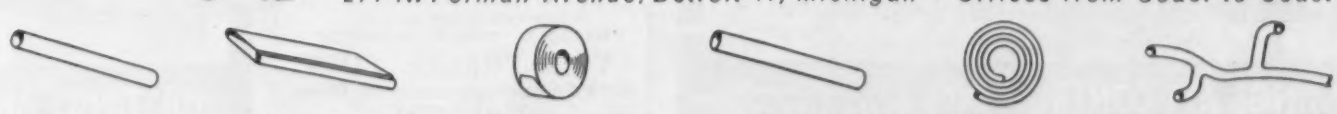


METALFLO LOCKSEAM COIL STRIP SEAMLESS TUBING TUBULAR PARTS

TEXAS STYLE: Wholesaler's 125,000 sq. ft. Offer Library, Self Service

Air Conditioned Building Is Multi-Purpose Home of Thermal Supply In Houston

HOUSTON, Texas — In the vast building it occupied last year at 11 N. Jackson, Thermal Supply has incorporated some special ideas in air conditioning, heating, and refrigeration equipment wholesaling.

To begin with, the building—in size—is in the true Texas tradition. The reinforced concrete structure has 125,000 sq. ft. of floor space, 250 ft. of rail siding, and over 400 ft. of truck dock.

In the 25,000-sq. ft. air conditioned display area there is a 25-ft. square city counter in the center.

The building is used to house the main Houston wholesaling operation, as home offices and as a distributing center for the firm's west side branch, as well as those in Beaumont and Galveston, Texas, and Monroe, La. Thermal Agency and Thermal Mfg. also occupy space.

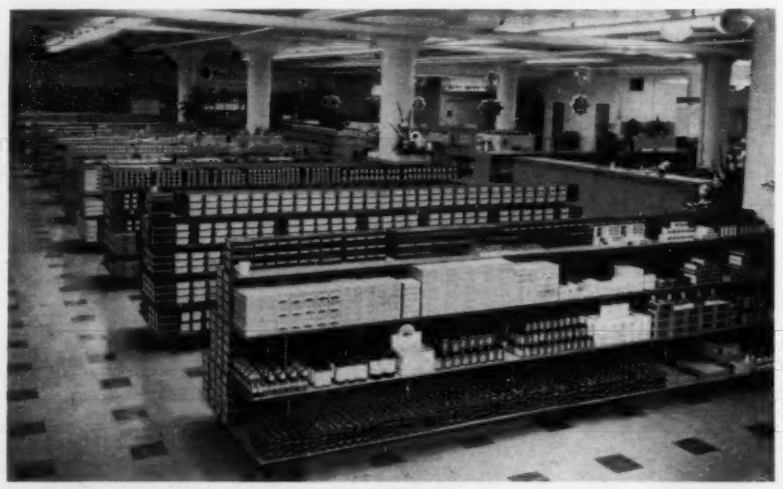
A highlight of the building is a separate library, adjoining the sales display floor where an experienced librarian spends full time cataloging and replacing material.

Expands Supermarket Idea

Thermal has continued and expanded the idea of supermarket type self-service displays which E. K. Peterson, president, put into practice here seven years ago, it was pointed out.

The wholesale selling floor with its extensive use of tinted lighting, pegboard, spatter paint, and graphic displays can be compared with floors of modern large retail department stores, Peterson says.

FULL-TIME EXPERIENCED LIBRARIAN maintains the catalogs and trade jorunals in this spacious library supplied for the use of customers of Thermal Supply in Houston, Texas. Engineering handbooks and manuals may be taken from the library for three days by signing for them. This library is adjacent to the sales floor.



SUPERMARKET-TYPE SELF-SERVICE is an important feature of the modern sales floor. In the right background of the picture may be seen the 25-ft. square city counter. The firm handles air conditioning, heating, and refrigeration equipment.

TINTED LIGHTING and pegboards are used to enhance the displays in the modern air conditioned display area. Merchandising area can be compared favorably to that in any modern department store.

Manufacturers' Sales Literature Kept Current

Regarding the library, it was noted that the job of keeping prices and specifications up-to-date is most important. But the use of manufacturers' sales literature "is many times neglected just because there is so much of it."

That's why, to lick this problem, the library was set up, Peterson pointed out. Indexing has been simplified so anything required can be found in a hurry. If a contractor should have difficulty finding a manufacturer of a flow control valve, for instance, he can go to the Thermal library and locate the proper index card. Under the heading are names and addresses of various makers of such valves.

When the contractor decides which name or names he would like to check further, he refers to a series of post binders in which manufacturers' sheets are arranged in alphabetical order. In many cases, all information necessary is obtained there.

However, it was explained, if the contractor wants to take specifications with him, or he needs literature to submit with a bid, he looks in the lower right corner of the page and there finds, stamped in green ink, the number of the library shelf where more sheets are kept.

Loan Some Books

Another section of the library is reserved for engineering handbooks, instruction books, and instruction manuals, it was indicated. These reference books can be taken from the library for three days by signing them out, it is pointed out.

In another department is maintained a back file of trade journals. They are kept in binders with the periodical's name printed on the cover. As each new issue comes in, the librarian discards the oldest copy and inserts the new.

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12" - 15" - 16" - 20"
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Other sizes made to your specifications
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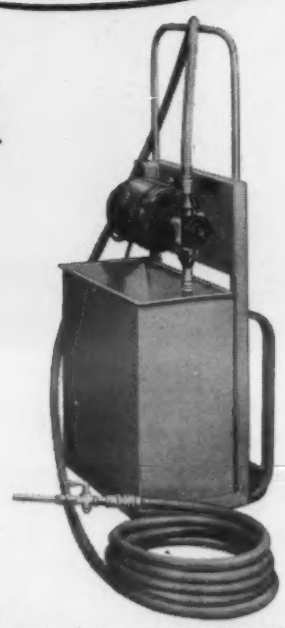
SAVES TIME and MONEY
SATISFACTION GUARANTEED
Write for Prices and Bulletin AC-77-C
HASTINGS AIR CONTROL, INC. 3215 Leavenworth Omaha 5, Nebraska



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THOUSANDS OF USERS PRAISE THE "HOIST-IT"
ERECT A 3,200 LB. UNIT IN 57 MINUTES

JOB DATA: Hinky-Dinky Super Market, Co. Bluffs, Ia.
Three 30 ton air conditioners, six gas duct furnaces and two gas unit heaters . . . all suspended by 2 men in less than 1 day.
Sol Lewis Engineering Co. saves over 60 man hours — Approximately $240.00.
HASTINGS HOIST-IT
Two Men Can Raise Up To 4,000 Lbs.
ALL TYPES OF EQUIPMENT
ATTIC UNITS • TRANSOM UNITS
Write for Prices and Bulletin AC-77-H
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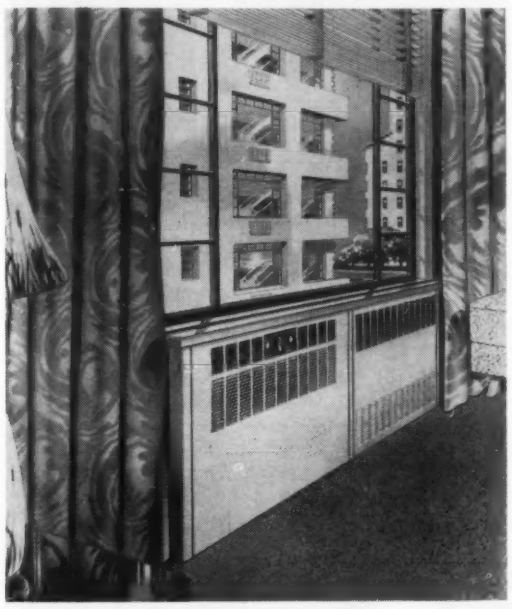
For more information about products advertised on this page use Information Center, page 18.

In-Wall Air Conditioner Can Be Serviced Without Removing from Housing Sleeve



BUILT-IN-WALL air conditioner has been designed by I. W. Air Conditioning Corp., New York City, to blend with any type of convector heating unit. It is said to be suitable for new or existing buildings or homes.

NEW YORK CITY — A new built-in-wall air conditioner, "designed to blend with any type of convector heating units in a single harmonious plane," has been developed by I. W. Air Conditioning Corp. here, a division of I. Wenig & Sons, Inc.

Known as "In-Wall," the self-contained conditioner is small and slim—yet quiet and fast cooling—and can be used with equal effectiveness in apartment houses, hotels, and motels as well as in private homes and office buildings, according to the company.

"It not only can be installed easily in both new and old structures but can be serviced without being removed from its housing sleeve," the announcement said.

"A simply operated control panel provides quick and easy choice of cooling, dehumidification, ventilation, exhaust, fresh air intake, and filtration—without bending or stooping. Each unit also has a built-in thermostat calibrated in degrees, and all components are over-sized, for extra durability.

"Exterior louvered grilles and trim are of aluminum and can be sized to match any brick, marble, or metal coursing."

To achieve quietness and freedom from cold drafts, In-Wall uses four over-sized centrifugal blower fans to move a large volume of air at a very low velocity over the cold coil, it was stated.

"The new units, which are available in ¾, 1, and 1½-ton sizes, provide enough filtered fresh air intake to permit windows to remain fully closed against outside dirt and noise," the announcement said. "In addition, In-Wall has a separate exhaust motor and fan to eliminate stale room odors.

"Interior covers, involving one, two, or three contiguous matching enclosures, depending upon under-window area to be treated, can be painted to match any desired wall color.

"In-Wall extends from rough floor up to the window sill stool, eliminating small areas of plaster that often peel off or crack. Enclosures are also available for both the air conditioner and convector to form the sill for the window."

A five-year warranty covers the refrigeration circuit, including compressor, evaporator, condenser, and interconnecting tubing.

New York More Than Doubles Number of Air Conditioned Hotel Rooms In Year

NEW YORK CITY—All but 33 of the 165 transient hotels that are members of the hotel association in this city advertise air conditioned rooms and are totally or partly converted to air conditioning.

The number of air conditioned rooms in New York City hotels now totals more than 25,000, more than double the number of air conditioned rooms available on July 1 last year, according to James A. McCarthy, executive vice president of the Hotel Association of New York City.

McCarthy believes that air conditioning is not only attracting more tourists but also more conventions to the city. He feels the traveler has become air conditioning conscious.

Among the hotels that will be completely air conditioned this year are St. Regis, Drake, Westbury, Sherry Netherland, Park Sheraton, Statler, Sheraton Astor, Wentworth, Dorset, Salisbury, Taft, Park Lane, Barbizon-Plaza, Tuscany, and Algonquin.

Many other leading hotels have air conditioned a large number of their guest rooms. Among them are: the Roosevelt, Pierre, Biltmore, Barclay, Carlyle, St. Moritz, Waldorf-Astoria, Commodore, Manger Windsor, Ritz Tower, Plaza, and Abbey.

In 1956 city hotels spent more than $30 million on a major transformation and modernization program, McCarthy said. From 1955 to 1957 $53 million was invested in this program, the major portion for air conditioning, he added. Two-thirds of the rooms in 43 leading hotels have air conditioning.

Several hotels have plans extending into 1958, and a few have current programs that will not be completed until 1959 or 1960.

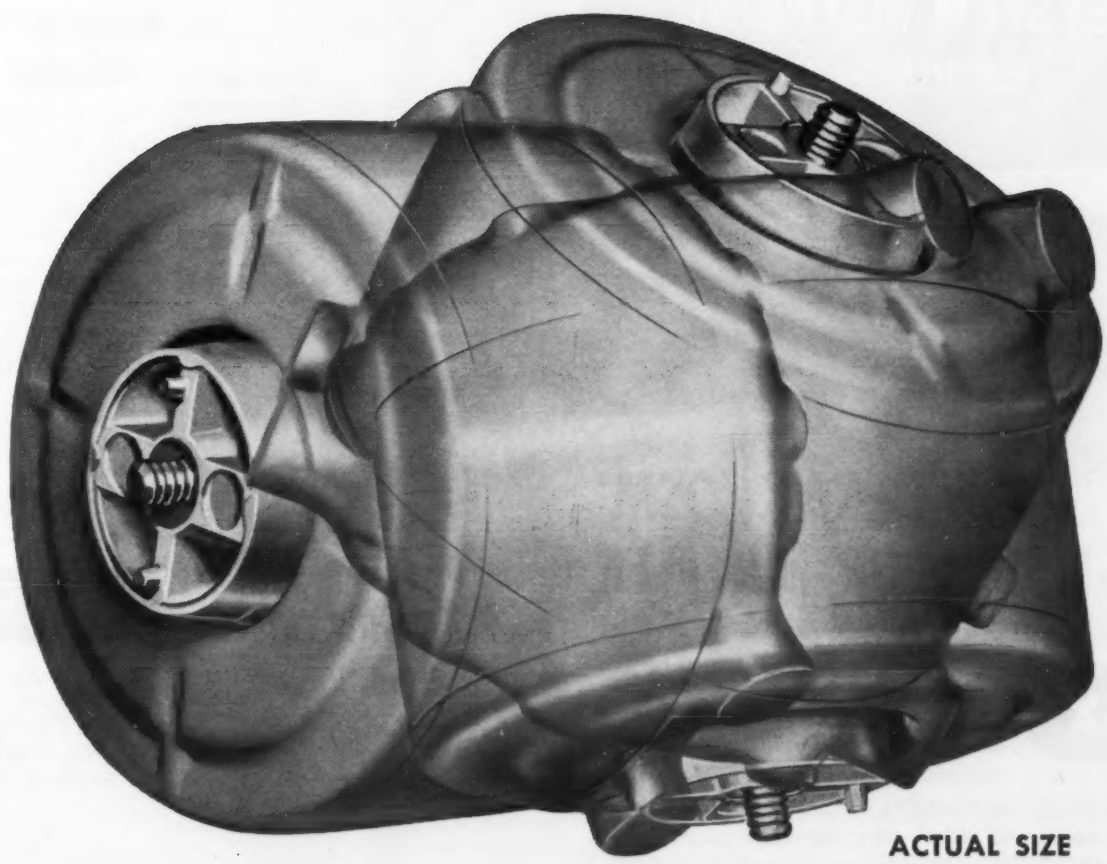
J. E. Blyth Named To Head Tuck-Aire Div.

SAN FRANCISCO—Appointment of James E. Blyth as Cooling Div. manager has been announced by James F. Deane, vice president and general manager, Tuck-Aire Furnace Co.

J. E. Blyth

Blyth will be responsible for sales, engineering, and service, as well as management of the Cooling Div.

For All-Angle Operation...



ACTUAL SIZE

New Lightweight Redmond Single-Bearing MonoMotor

This new all-angle single-bearing condenser fan MonoMotor was developed specifically for the refrigeration and air conditioning industries in answer to modern demands for a smaller, lighter, yet more powerful motor. It is adaptable for a multitude of applications where a long-life quality motor is needed that will give years of continuous service-free use at low operating cost.

All-angle operation of the AM-4 is achieved through a special thrust bearing and pin assembly. The rotor end play is controlled to very close tolerances, which makes possible the mounting of the motor in any position without the rotor floating in the bearing.

With the new Redmond positive oiling system the AM-4 is guaranteed not to leak oil in all-angle use or in shipment. This design provides an extra large oil reservoir for lifetime lubrication. Positive oiling is achieved through the forced recirculation of the lubricant, which is completely suspended and uniformly distributed in pure wool and nylon wicks.

The basic AM-4, rated at 1½ through 16 watts, is 4-pole, 1550 RPM, 115 volts, 50/60 cycles, and is available in odd voltages and frequencies.

It will pay you to obtain complete information about this new motor by sending for the literature described below.

Send for Complete Performance Data

Write for the "AM-4 Bulletin"—it contains complete information on the design features, dimensions, performance, and operational data.

The Standard of Dependability

Redmond COMPANY Inc.
OWOSSO, MICHIGAN

ADVERTISED IN The Saturday Evening POST

THE BIG NAME IN SMALL MOTORS

For more information about products advertised on this page use Information Center, page 18.

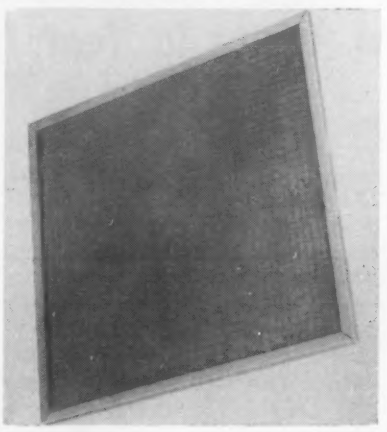
Farr Offers Permanent Impingement Filter

—KEY NO. G-750—

LOS ANGELES — New "Far-Air" type F/S air filter has just been announced by the Farr Co.

These new units are permanent-type, impingement filters with a cleanable, metal screen media. According to the manufacturer, the F/S is designed to efficiently deliver 350 to 520 f.p.m. air flow and is effective in areas where there is a high lint concentration in the air.

The filter media, which consists of flat and corrugated rows of wire screen mesh, will not gap or separate. It also permits a considerable amount of face-loading without impeding air flow.



Plastic Steel Kit Repairs Metal On-the-Spot

—KEY NO. G-751—

DANVERS, Mass. — A new emergency repair kit containing plastic steel for on-the-spot repairs of tanks, pipes, pumps, valves, and other types of machinery is now available through industrial supply dealers, according to Devcon Corp., the manufacturer.

Plastic steel is a combination of 80% steel and 20% plastic. It can be formed into any shape and will not run or sag when applied.

NOW

OIL SEPARATION AND SYSTEM SILENCING

ENGINEERED INTO A SINGLE UNIT

the HEAT-X 'OSM' OIL SEPARATOR-MUFFLER

heat-x

Silencing is more than just *incidental* and *partial* with Heat-X 'OSM' Oil Separator-Mufflers. These units were *specifically engineered* to completely silence all system noises and absorb all pulsations from the compressor . . . *in addition* to separating entrained oil.

And these "all-in-one" units make float troubles a thing of the past. 'OSM' Oil Separator-Mufflers have *no floats* to hang open or stick closed. Instead, units incorporate a positive action Velocity Pressure Mechanism, *exclusive with Heat-X*, which opens only when compressor is running . . . closes of its own weight when compressor stops.

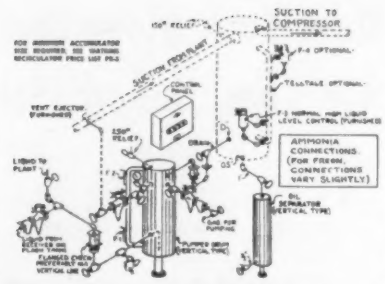
Ratings based on *tonnage*, not *horsepower*, permit close matching of unit to requirements . . . eliminate need to buy more than required capacity.

Ruggedly constructed to A.S.M.E. specifications. Available in capacities from 1 to 75 Tons F-12 and 1 to 100 Tons F-22.

REQUEST FREE DESCRIPTIVE CATALOG.

HEAT-X, Inc.

BREWSTER • NEW YORK



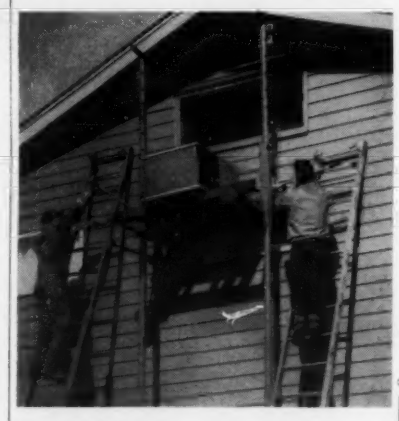
Develops Refrigerant Pumping Recirculator

—KEY NO. G-752—

MAYWOOD, Ill.—For an industrial or commercial plant having an existing suction accumulator tank in the suction line ahead of refrigeration compressors, a refrigerant pumping recirculator system is now offered by the J. E. Watkins Co.

Manufactured for any tonnage and any refrigerant, this patented system drains liquid from the existing suction accumulator tank into a "pumper" tank. When the pumper tank is full, the system automatically introduces refrigerant gas (at liquid feed pressure) into the pumper. Simultaneously, the main liquid supply valve is closed off and liquid from the pumper feeds the plant. A low level control on the pumper switches the system back to draining by closing off high-pressure gas to the pumper, opening the main liquid feed valve, and opening a vent line valve, the company said.

A control is provided which automatically closes off the main liquid supply if excessive liquid level builds up in the accumulator.



Portable Hoist Lifts Attic Conditioners

—KEY NO. G-753—

HASTINGS, Neb. — A low-cost, portable, outdoor hoist for lifting attic-type air conditioners has been announced by Hastings Air Control, Inc. here.

With the Hastings "Hoist-it," and a simple set of wall brackets, two men can quickly and safely raise any size attic air conditioner, the firm said.

Hoist-it can be taken apart or erected in a few minutes and requires little truck space. The shipping crate converts into a 7½-ft. storage box for carrying the dis-assembled hoist.

Unit can also be used indoors for raising items as heavy as 8,000 lbs. to ceilings as high as 24 ft. Other uses include lifting room air conditioners into transoms and raising suspended units in basements.

U.L. & A.S.M.E. WATER-COOLED CONDENSERS ½ TON to 15 TONS and LIQUID RECEIVERS for EVERY REQUIREMENT

Write for our NEW Catalog

STANDARD REFRIGERATION CO.

332 S. Hoyne, Dept. C Chicago 12, Ill.

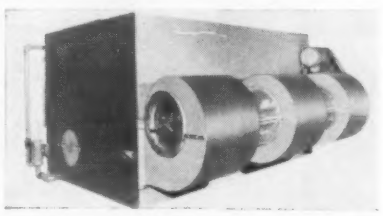
Introduces 2 Evaporative Condenser Lines

—KEY NO. G-754—

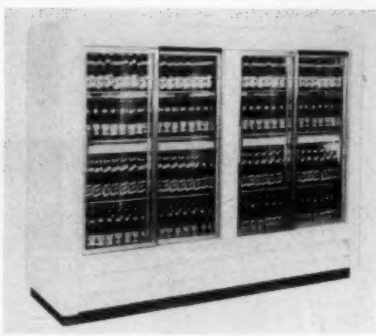
MILWAUKEE—The Vilter Mfg. Co. announced it is now offering two new lines of evaporative condensers—the VXF and the VSC—both suitable for "Freon" or ammonia.

The new "Vilter External Fan" condenser is available in capacities of 30 through 300 nominal tons. Since the fan on the VXF is externally mounted, it does not handle the moist saturated air from the spray chamber. This minimizes corrosion and greatly extends fan life, it was stated.

In contrast the new "Vilter Standard Condenser" is designed primarily for indoor use, although it can be installed outdoors. The VSC is of the sectional frame type and can be dismantled into three sections for indoor placement and simplified erection. The unit is



readily adaptable to ductwork and provides a means of ventilating the room in which it is installed, it was said. It is available in 50 through 300 tons capacity.



Reach-Ins Styled for 'Counter Display'

—KEY NO. G-755—

HUDSON, Wis.—Glass-front reach-in coolers, featuring "counter display" styling, have been added to the Nor-Lake, Inc. line of commercial refrigeration equipment.

The "Jumbo" (WC8) cooler holds 2,083 cans, 1,122 12-oz. bottles, 883 qts. of milk, or over 65 cu. ft. of prepared foods, while the "Space Miser" (WC4) can accommodate 1,000 cans, 561 bottles, 431 qt. cartons, or 32 cu. ft. of food, it was explained.

Thick "Fiberglas" insulation locks in cold, generated by self-contained hermetic condensing unit and circulated by a full length, twin-fanned overhead coil.

Service Oil Burner Fuel Filter Easily

—KEY NO. G-756—

GASTONIA, N. C.—A new oil burner fuel filter that can be serviced without tools or muss in a few seconds has been announced by the Wix Corp.

The company states the major advantages of this modern "spin-on-spin-off" filter are convenience, efficiency, safety, and economy, plus simple, hand installation and removal with easy "twist-of-the-wrist," quick action.

Constructed of rustproof, lightweight aluminum with the "Porosite" pleated filtrant, it is emphasized that even micron sized particles of dirt and grit are retained, while a full 120-gal.-per-hour gravity flow is guaranteed.

MARSH Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.

PRESSURE GAUGES and Dial Thermometers for all services.

MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.

MARSH INSTRUMENT COMPANY

Sales Affiliate of Jas. P. Marsh Corporation

Dept. D., Skokie, Ill.

Information Center

For *more information* on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertised

(list name, page, and issue date)

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What's New or Current Literature Available

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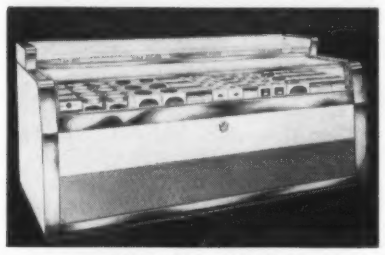
For more information about products advertised on this page use Information Center, page 18.

7-Ft. Merchandiser Has 30% Larger Top Opening



——KEY NO. G-757——

MINNEAPOLIS — A new 7-ft. automatic forced-air hot-gas defrost merchandising cabinet, model GFD-172, which utilizes two fans to insure maximum condenser efficiency, has been introduced by Schaefer, Inc. here.

Another feature of this new cabinet is its 30% larger top opening assuring easy accessibility to the ice cream packages, the firm pointed out.

Slanting Thermopane front of the merchandiser, the modern low superstructure that accommodates a large stock of related items, the new roll-out night cover that responds to a finger touch, lighting that shows off the merchandise, coupled with large capacity that eliminates frequent restocking are features.

Remote Air-Cooled Units Available

——KEY NO. G-758——

CLEVELAND — Perfection Industries Div., Hupp Corp. recently introduced a complete line of remote air-cooled air conditioners as a lower-price companion to the "Deluxe" line.

Available in capacities of 1¾, 3, and 5 hp., the units have full capacity compressors and ample evaporator and condenser coils for maintaining full capacity cooling.

A choice of three cooling coils—U-shaped, flat, or horizontal—makes the unit adaptable to any situation. Cooled air may be circulated through furnace ductwork or direct from the air handler.

Display Cards Sell Small Blow Torches

——KEY NO. G-759——

BLOOMFIELD, N. J.—Two new transparent plastic-covered cards which hold a small inexpensive blow torch that is said to be easy to use for repair jobs have been announced recently by Kidde Mfg. Co., Inc. here.

Kidde's "skinpack" displays give full view of the torch and permit space-saving counter racking.

One card contains just the blow torch and cartridge, while the other comes with the blow torch, soldering tip, solder, and two chargers.

Designs Air-Cooled Water Chiller

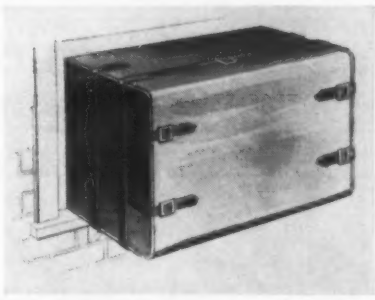
——KEY NO. G-7510——

NEW YORK CITY—A new 5-hp. air-cooled water chiller designed for flexible installation in large residences was recently introduced by the Plumbing & Heating Div., American-Standard.

New chiller is composed of two compact matching units: an evaporator and a remote condenser section. Both are factory-assembled packages connected during installation by flexible copper tubing, by means of break-away valves.

The evaporator comprises copper tubes enclosed by a two-section steel tube. It is combined in a package with a permanently lubricated, hermetically-sealed compressor, on spring-mountings with a counterweighted crankshaft for quiet operation.

The condenser, constructed of aluminum fins with two coils of copper tubes, has been designed for maximum heat transfer and minimum air resistance.



Introduces Custom Conditioner Cover

——KEY NO. G-7511——

NEW YORK CITY — Bogene, Inc. has introduced a new custom fit air conditioner cover to retail at $3.98. It is made of 12-gauge specially formulated vinyl guaranteed to withstand weather and remain pliable at 20° below zero.

These covers are designed to fit all makes and models snugly and give the neat trim appearance of a custom fit. Bottom vents as well as the top and sides are covered to keep out winter drafts.

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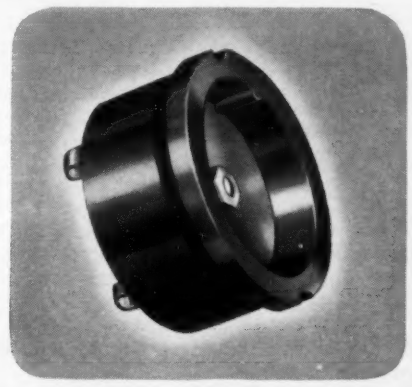

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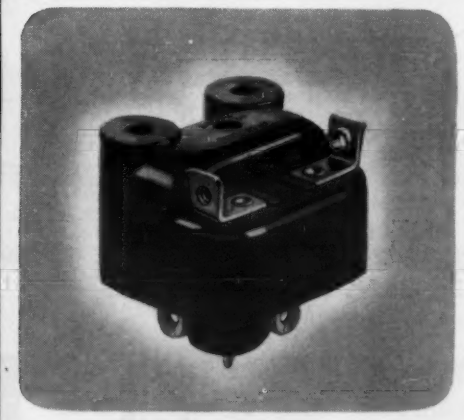

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Refrigeration Problems
And Their Solution
(*As Written by Paul Reed*)

The late Paul Reed, one of the refrigeration industry's most respected writers and teachers, wrote a column on "Refrigeration Problems and Their Solution" which was published regularly in AIR CONDITIONING & REFRIGERATION NEWS for more than 15 years.

Readers throughout the years have hailed this written material as some of the most practical and helpful that has ever been published. Fortunately, the author had an opportunity to revise some of this material in the months before his untimely death, and the NEWS is re-publishing some selected instalments with the thought that it will be useful and interesting to its present readership.

Hot Weather Hints (5)

FACTORS IN CONDENSER CAPACITY

From the previous discussion, it will be seen that there are three main points that determine the head pressure of an air-cooled unit:

1. The size of the condenser. There is not much to be done about this short of replacing it with a larger one, but we can be sure that all of the surface is clean of dust, lint, and other foreign matter that tend to insulate the condenser, as well as to restrict the amount of air through the condenser.

2. The temperature of the air to the condenser. This is usually room temperature, but sometimes it may be higher than room temperature, if some of the air is recirculated. Also, the room may be too small or not well ventilated so that the air gets hotter as the condensing unit runs. If this is true, additional windows must be provided or even ducts run to an adequate supply of cool air.

3. The amount of air passing through the condenser. This we can control. We can be sure that the fan is the right one for that unit, but we must be careful about using too large a fan, for it may overload the motor.

See that the condenser is clean, that the shrouds are tight and that there are no boxes or other objects close to the air blast from the unit, that will set up "static pressure" and interfere with free circulation of air.

If it is a static condenser, see that the "flue" is open and that there is nothing restricting the inlet of air at the bottom of the refrigerator or at the top of the flue.

How can you tell if the head pressure of an air-cooled machine is too high? It is easy to figure the maximum head pressure. There are just two things to do:

(1) Add 35° to the room temperature. This gives the condensing temperature.

(2) Look up the pressure corresponding to this condensing temperature, in the temperature-pressure tables for that refrigerant, and that is the maximum head pressure.

Example: Room temperature, 75°—refrigerant, Refrigerant-12.

(1) 75° + 35° = 110°, is the condensing temperature.

(2) 136 p.s.i.g. is the pressure corresponding to 110° in the saturation temperature-pressure tables. So 136 p.s.i.g. is the maximum head pressure for an air-cooled condensing unit, using Refrigerant-12 operating in a 75° room.

Occasionally you run across an installation that, regardless of what you do, just will not carry the load. In winter or even in normally warm weather, it gets by, although the machine runs most of the time. Nevertheless, it does hold temperature. But during blistering hot days, in June, July, and August or maybe even some days in May or September, the machine not only runs without stopping but the refrigerator and product temperatures go too high.

You do everything you can think of. There is plenty of charge, no restrictions, nor excessive pressure drop; the evaporator is fully active; the air circulation is not impeded; you have tightened hardware and put on some new gaskets; the condenser is clean; the fan is putting as much air through the condenser as possible; the compressor is in good shape, valves working OK; you have even overfed the expansion valve so as to reduce the superheat in the suction line.

But despite all your efforts and all the little tricks of the trade that you have picked up over the years, the machine just won't handle the load. The head pressure is way up, machine runs continuously, and temperatures in the box are just not low enough to prevent food spoilage.

NEEDS BIGGER UNIT

Everything about the installation is in first class condition and doing its very best. The only out is for the customer to buy a new and larger machine. If it is a ¼ hp., he probably needs a ⅓-hp. job or possibly even a light ½-hp. unit. In the long run, he is better off to buy the new machine. He would save service costs, for the job is overloaded and most anything can and does happen. Also, he would save the food losses. The customer is probably losing business, too.

But for some reason, he will not buy a new unit or you cannot get one for him right away—soon enough to do him much good. Maybe he has a new fixture on order. Maybe there just isn't room for a larger unit. Whatever the reason, the present unit *has* to be made to do the job if it is humanly possible, and it has to be done *now*.

It wouldn't do any good to speed up the compressor, for the chances are that the motor is doing about all it can. Besides, the condenser is overloaded now and the head pressure is way up.

SUPPLEMENTARY WATER-COOLED CONDENSER

There are three ways to give the air-cooled machine some more capacity, and all three of them require water.

(1) One way is to replace the air-cooled condenser with a water-cooled condenser. This is often possible, but it is rather expensive. It means not only a new water-cooled condenser, but a water-control valve and a high-pressure cut-out. Also, it takes a lot of time drilling new holes to mount the condenser, water valve, cut-out, etc. A sufficient amount of cooling water at a low enough temperature may not be available or it may cost too much. Or the customer may be prejudiced against water-cooled condensers. But it can be done, and it is one way to increase the capacity of the condensing unit by lowering the head pressure.

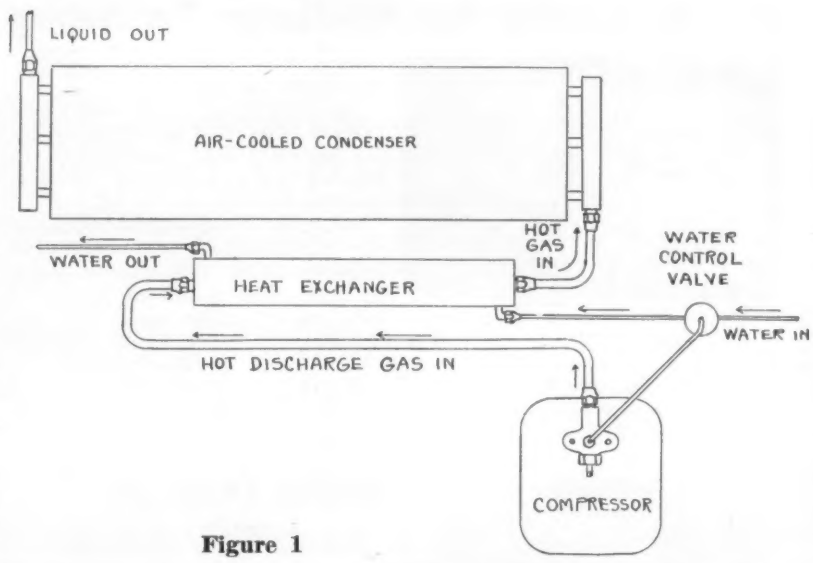

Figure 1

(2) Another way, and one that is often feasible even if available water is rather warm and costly, is to put a heat exchanger in the discharge line from the compressor to the air-cooled condenser as shown in Fig. 1. This is an ordinary heat exchanger that was originally designed for cooling the liquid refrigerant by means of the cold suction line.

The hot gas from the compressor passes through the larger, inner tube (that was intended for the suction line) and the water is passed through the outer tube of the heat exchanger (the part that was intended for the liquid line).

Important: Connect the water to the condenser side of the exchanger, so that it operates in a counter-flow manner—the water flowing in the opposite direction to the hot gas from the compressor. In this way, the cooled gas, as it leaves the heat exchanger, is in thermal contact with the coolest water, so the gas to the condenser is cooled to a minimum temperature.

A water control valve is shown in Fig. 1. It should be set to maintain a pressure that is low enough to give the condensing unit enough additional capacity that it can carry proper temperatures, and yet stop once in a while at least.

Just what this discharge pressure setting will be is difficult to accurately predict, but if it can be as low as the pressure on the pressure-temperature chart corresponding to a temperature about 15° to 20° above room temperature, it should add enough capacity to the unit to serve your purpose.

SETTING THE WATER VALVE

Normally, the highest head pressure (with Refrigerant-12) that you would have in a 95° room would be about 180 p.s.i.g. If the job was heavily overloaded, the head pressure might go up to above 200 p.s.i.g., so even if you could get it down to the 180 p.s.i.g., you would be increasing the machine's capacity by around 15%. If you could get it down to 155 to 160 p.s.i.g., you would be further improving the efficiency by another 15%.

So in all, you may be helping an overloaded machine as much as 25% which may be enough to carry the overload and hold temperatures and maybe even allow the machine to cut-off once in a while.

So you would wish to set the water valve to maintain a head pressure about 10% below the normal. Condensers are usually sized so that the condensing temperature is about 30% with a maximum of 35° above room temperature, so you would want to set the valve at a pressure that corresponds to a room temperature plus about 20°.

In our example, this would be 95 + 20 = 115° corresponding temperature, and the pressure cor-

(Continued on next page)

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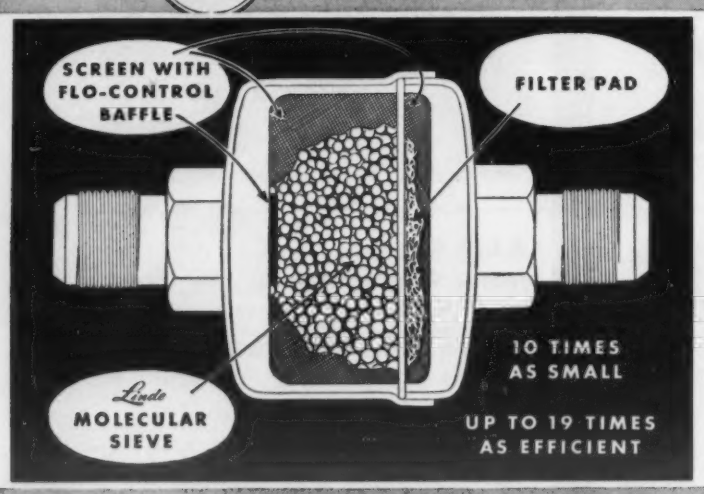

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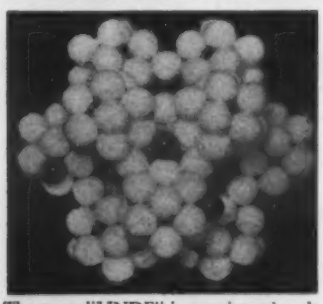

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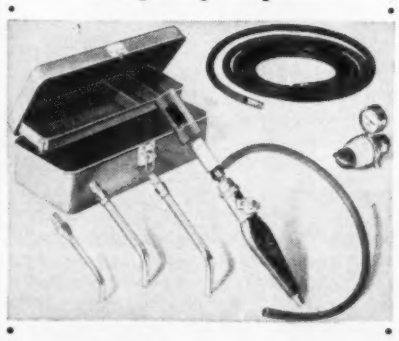

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Hot Weather Hints-

(Continued from preceding page)
responding to 115° is 146 p.s.i.g. Therefore, the water valve would be set to close at about 145 p.s.i.g. and open about 10 or 15 p.s.i.g. higher— that is, about 155 or 160 p.s.i.g. So the water valve would not normally open unless the room temperature got up to 85° or above.

SETTING WATER VALVE

All you expect this small auxiliary water-cooled condenser to do, is to hold down excessive head pressures, so you want to set the water valve to cut off during normal weather, and open only during the extra-hot weather.

A solenoid valve could be used in the water line to the heat exchanger. The electric coil of the solenoid valve would be wired in parallel with the compressor motor (and should, therefore, be for the same voltage). Then when the machine starts, the solenoid valve opens and lets water to the heat exchanger. One disadvantage of this method is that the water flow to the heat exchanger is unregulated, regardless of how much or how little water is required.

On the other hand, the pressure regulated water-control valve passes only as much water as is necessary to maintain the desired head pressure. Moreover, in cool weather, when the air-cooled condenser itself will take care of the reduced load, the water valve will not have to open at all, for the headpressure will be below the opening pressure of the water control valve.

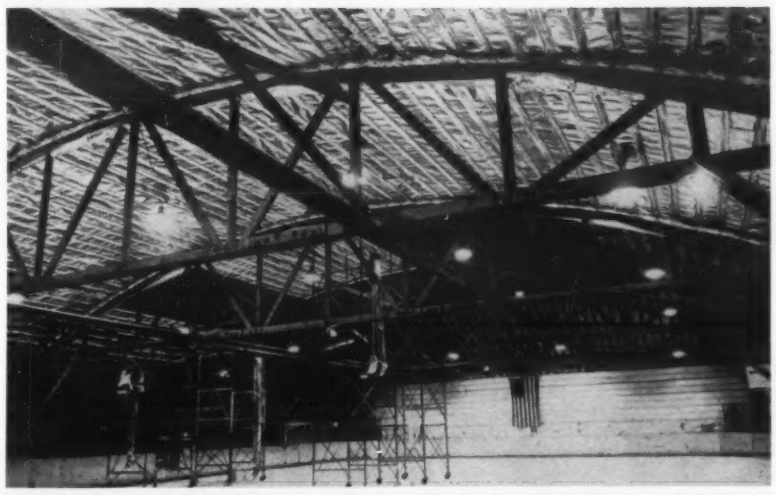
WATER USAGE SMALL

The water usage of the heat exchanger in such a method, is small compared to the water usage of a water-cooled condensing unit of adequate size. It may be as little as 10 to 20% as much in fact. Therefore, it may be possible to dispense with either the water control valve or a solenoid valve and use merely a hand valve to be turned on under extreme conditions only.

It is not necessary with this arrangement, to use a high-pressure cut-out. Even if the water supply were entirely cut off from the heat exchanger, the unit would not be any worse off than it was before the heat exchanger was put on and when the unit had to depend on the air-cooled condenser alone.

The head pressure would rise, if it was hot enough weather for the water-control valve to be open, but the head pressure would not go to the dangerously high pressure that would be the case with an ordinary water-cooled unit.

(To Be Continued)



YEAR-ROUND SKATING has been made possible by installing aluminum foil insulation to the underside of the roof of the Crystal Ice Rink in La Grange, Ill. Prior to installation of the "Alfol" insulation it was necessary to close the rink down during June, July, and August, according to the management. Also reported is a $200 per month power saving, because the refrigeration units can now be shut down part of the time except during the hottest months of the year.

Aluminum Foil Insulation Allows Year-Round Ice Rink Operation

LA GRANGE, Ill.—Use of Aluminum foil insulation has made it possible for the Crystal Ice Rink near here to remain open for skating the year around and has resulted in other benefits, according to owner James L. Maloney.

A total of 14,500 ft. of "Alfol" aluminum foil reflective insulation was installed in the rink in March, 1956. Melting of the ice floor during the hot summer months previously forced the rink to close down completely during June, July, and August. In addition, operations were often curtailed during warm spells in the spring and fall.

Stapled under the roof of the rink from wall to wall, Alfol provides a second continuous "ceiling" to protect the ice floor from outside heat and retain the cool inside atmosphere, it was pointed out.

Because of the highly reflective properties of aluminum, heat from the summer sun is reflected back from the foil and the ice remains cold and firm on the floor. The air inside the building is now much cooler at all times—"33% cooler during the summer months," Maloney says.

A product of the Reflectal Corp., Chicago, a Borg-Warner subsidiary, Alfol consists of multiple layers of aluminum foil which automatically space themselves about one inch apart when installed between roof and side wall joist, stud, or furring strip pieces. The aluminum layers, plus the air spaces in between, are said to form a highly impermeable heat and vapor barrier.

The bottom layer of foil is laminated to a heavy, waterproof duplex backing of asphalt-impregnated paper which provides support and prevents ripping and sagging during application.

Alfol is described as "remarkably compact." All of the insulation required for the Crystal Rink installation was packaged in 29 rolls of 16-in.-wide aluminum foil.

Three workmen were able to install the entire 14,500 ft. of Alfol in four days. The foil was applied between roof joist and furring strips by means of hand tacking. A 20-ft. rolling scaffold was used to reach the points of application.

Previously, the only insulation in the rink was glass wool installed along the sides of the building.

The Alfol installed in the Crystal Rink is Type 4, recommended for installation where no permanent ceiling has been constructed. It consists of three aluminum foil layers with the bottom layer laminated to a sturdy kraft-and-duplex backing. Upon application, the foil sheets space themselves automatically to form three optimum-size reflective air spaces between the sheets. Air is locked in these spaces at application, "providing a positive and continuous vapor barrier and increased insulating efficiency."

"Freezing the surface of the rink to provide ice for skating is accomplished by pumping a liquid refrigerant consisting of a solution of ammonia and brine through copper pipes located under the skating surface," Maloney explained.

A pump driven by a 20-hp. motor provides the force that moves the refrigerant through the pipes. A 75-hp. compressor and two condensers are used in conjunction with the pump.

"Before Alfol insulation was installed, it was necessary for us to keep the refrigerating pipes in operation constantly during the time the rink was open," Maloney continued. "Now we can shut off the pipes completely for several three-hour periods daily during all but the summer months. The ice remains solid even when the pipes are not operating. This means a $200 a month savings in power."

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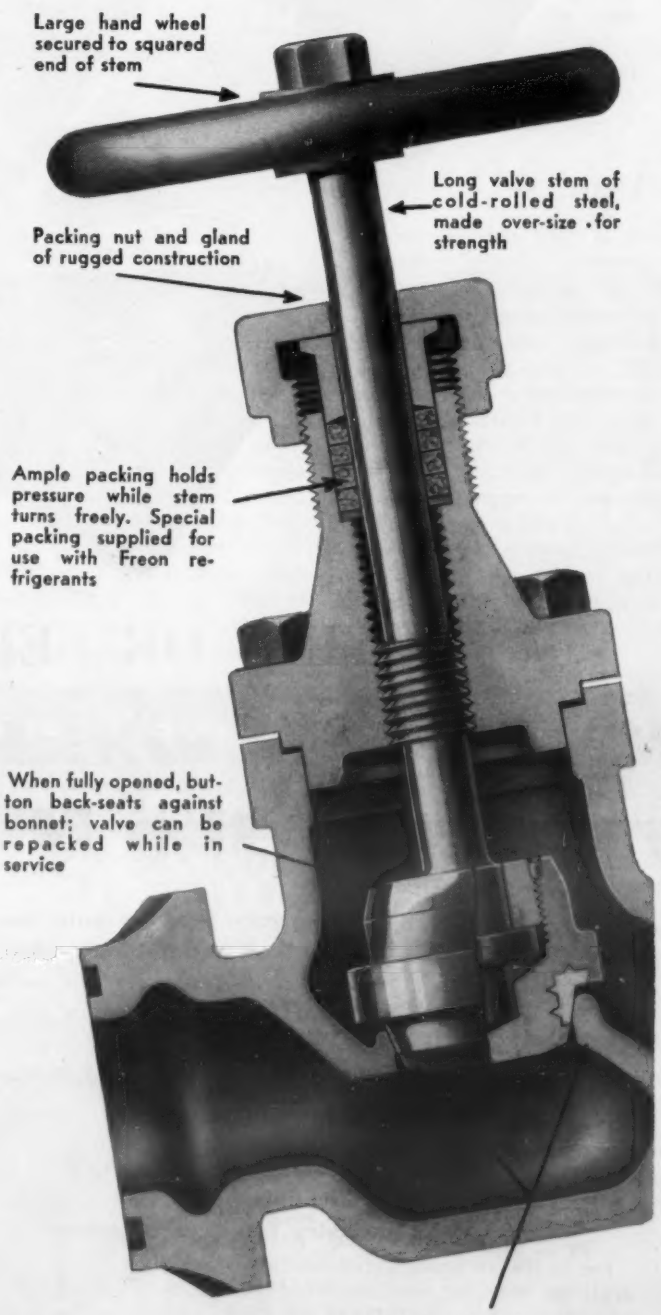
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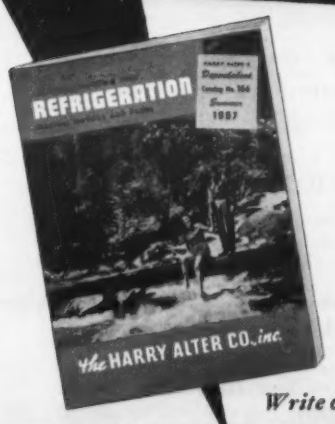

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Compressors--

(Concluded from Page 1, Col. 2)

pressor bodies for automobile air conditioning use totaled 50,580 this year, compared with 27,755 in April 1956.

Four-months shipments of compressor bodies for non-automotive use (except those used in household refrigerators and those designed for ammonia refrigerant) were slightly below shipments for the first four months of 1956, ARI reported.

The four-month total for 1957 was 1,708,711, compared with 1,756,346 a year ago. April shipments this year were 475,579, against 495,472 in 1956.

Most of the decline in shipments was noted in fractional-horsepower compressors, while 1, 1½, and 2-hp. units all showed gains this year over last.

Largest of these was the almost 400% gain in shipments of 2-hp. compressor bodies—from 30,435 units in the first one-third of 1956 to 118,684 in the same period this year. Shipments of 1-hp. bodies increased from 301,898 in the 1956 period to 548,413 this year.

The figures released by ARI were compiled from reports by manufacturers whose output is estimated to represent in excess of 90% of the industry. Broken down by categories, the figures follow:

MANUFACTURERS' SHIPMENTS OF COMPRESSOR BODIES PRODUCED BY REPORTING COMPANIES
(Except for household refrigerators)

	Shipment Including Exports	
Horsepower*	**April, 1957**	**Jan.-April, 1957**
⅛ & under ...	46,074	171,987
¼	84,142	291,015
⅓	21,143	79,310
½	11,244	36,713
¾	46,106	215,160
1	184,060	548,413
1½	28,527	142,141
2	22,040	118,684
3	13,919	42,840
5	9,283	32,301
7½	6,056	20,363
10	1,467	4,595
15	374	1,279
20	240	871
25	205	699
30 & over	699	2,340
Total	**475,579**	**1,708,711**
For Ammonia Refrigerant—Total	146	515
For Automotive Air Conditioning—Total ...	50,580	210,312
Grand Total	**526,305**	**1,919,538**

*For all refrigerants **except** ammonia (excluding units for automotive air conditioning).

Reporting companies: Airtemp Div., Chrysler Corp.; Bendix-Westinghouse Automotive Airbrake Co.; Brunner Div., The, Dunham-Bush, Inc.; Carrier Corp.; Copeland Refrigeration Corp.; Curtis Mfg. Co., Refrigeration Div.; Frick Co., Inc.; Frigidaire Div., General Motors Corp.; General Electric Co.; Kelvinator Div., American Motors Corp.; Lehigh, Inc.; Tecumseh Products Co.; Trane Co., The; Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Div., Borg-Warner Corp.

This summary includes all compressor bodies shipped by reporting companies **regardless** of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a room air conditioner, display case, freezer, or commercial refrigerator). Shipments for export are included. Shipments for household refrigerators are **not** included.

In order to avoid duplication of reporting, shipment figures were requested only from companies that assembled and machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

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Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzales—25¢ each.

Mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

'National Construction Agreement'--

(Concluded from Page 1, Col. 4)

it to Schoemann.

The resolution stated that the discriminatory terms afforded to selected contractors through national agreements create unfair competition detrimental to the overwhelming majority of employers of UA members.

It further declared that the use of the agreements to destroy, hamper, and overbalance the normal processes of local collective bargaining is totally inconsistent with the announced objectives of the UA to maintain good labor relations and the well-being of the plumbing and heating industry.

National Agreements Aimed at Large Firms

National agreements, Schoemann explained in the July issue of the *United Association Journal,* "have the specialized purpose of organizing large firms which usually have no agreements with our local unions because they rarely do work steadily in any one locality. These firms design, engineer, and install special types of piping systems on a national basis."

The national agreement, he said, places a floor under wages ($2.75 per hour for journeymen and $3 per hour for foreman—up 25 cents per hour over 1956 rates), which local unions can exceed by local agreement.

It also establishes a minimum of overtime payments, which local unions can increase by local agreement, and it fixes the hours of straight time work unless the national contractor should agree otherwise locally.

"These rates are, of course, minimum rates," Schoemann emphasized. "Where a national contractor has work in a territory where a local union has established a wage rate higher than the minimum, the higher wage rate must be paid. Local conditions on overtime and premium pay will continue to prevail."

However, Schoemann pointed out, all other provisions of a local agreement dealing with the terms and conditions of employment are subordinate to the national contract.

"In other words," he stated, "the national agreement sets the standards for our national contractors and local unions are duty bound to observe these standards."

Ease Piping Rule

An important provision of the new agreement revises the fabrication clause to require only pipe of 2-in. diameter and under to be fabricated on the job site. Previous agreements had required pipe of 4 in. or less to be fabricated on the job.

Now, piping over 2 in. in diameter may be fabricated on the job site or in the shop, at the option of the employer.

"This provision, and its added requirements of shop fabrication only at our building trades rates have been expressly declared to be vital and essential to the entire agreement," Schoemann said.

Under the new agreement, national contractors are required to pay contributions only to four kinds of fringe benefit funds. These are health and welfare funds, pension funds, vacation funds, and apprenticeship or journeyman training funds.

In the cases of training funds, the national contractor pays only when he participates in or becomes a party to the negotiations and becomes a party to the local agreement.

National contractors cannot be required to make any contributions whatsoever to any other types of funds, such as industry improvement funds, or other similar arrangements.

They also cannot be required to make a lump sum payment to any general fund.

Payroll Contribution For Education Boosted

Payroll contribution to the national educational trust fund for training apprentices and joruneymen have been increased from one cent to 2½ cents per hour under the new contract.

The new contract also emphasizes the right of all contractors to choose their own foremen. This has always been UA policy, Schoemann declared.

"Unfortunately," he added, "this right has lost some of its value in some places because our local unions have sometimes insisted that they had the right to select the foreman whom the contractor could appoint.

"This insistence conflicts with the national agreement and to emphasize this point we have now provided that the selection as well as appointment of foreman is the responsibility of the employer."

West Penn Sales--

(Concluded from Page 1, Col. 4)

Combination refrigerator-freezer sales in June, 1957, amounted to 482, contributing to a six-month total of 1,903. Figures for last year were not available.

Sales of domestic refrigerators totaled 1,546 in June, 1957, as compared to 1,891 for the same month in 1956. The first six months of 1957 brought sales of 6,528, whereas in 1956, 8,532 were sold.

Tappan, Speed Queen To Raise Some Prices

DETROIT — Tappan ranges and Speed Queen washers and dryers will carry higher prices, the companies announced.

All Tappan ranges will cost $10 more at the retail level, beginning about Sept. 1, according to P. I. Berno, Tappan vice president and treasurer. Speed Queen division of McGraw-Edison Co. announced prices on its 1958 models will be up 2% to 3% over 1957 prices.

Packers--

(Concluded from Page 1, Col. 5)

mission jurisdiction.

Victor R. Hansen, assistant attorney general in charge of the Anti-Trust Div., Justice Dept., asserted recently that the Justice Dept. has concluded that "granting the relief sought by the packers could be harmful to competition in major segments" of the meat packing and food industries.

He did not rule out limited relief to the packers, however, if such should be found to be in the public interest.

At the same time, the Senate judiciary committee has approved a bill that would give the FTC jurisdiction over most activities of meat packing between the stockyards and the retailer.

This is intended to block a recently exposed loophole that permits food chains—or any other concerns—that hold 20% or more interest in a packing plant to come within the jurisdiction of the Packers and Stockyards Act. By so doing, they are regulated by the Dept. of Agriculture rather than the Federal Trade Commission.

The Dept. of Agriculture has been charged with lack of interest in enforcing the trade regulation provisions of that act.

The bill, if adopted by Congress, would bring some activities of the meat packers under the jurisdiction of the FTC as well as leave no doubt of FTC jurisdiction over food chains.

Repair Rackets--

(Concluded from Page 1, Col. 2)

ber of repair men had charged for service work actually performed by distributors. The repair men picked up the appliance and simply delivered it to the distributor, then returned it, with a bill, to the owner, it was stated.

One consumer complained that he had received what he thought was an excessive bill for an air conditioner compressor. It was found that $50 had been charged for a new compressor which was actually under the manufacturer's guarantee.

Racket victims are often those who need service during hours when authorized repair shops and distributor operations are closed, it was pointed out.

Sheet Metal--

(Concluded from Page 1, Col. 4)

the employer group as sole bargaining agent with the union. A court hearing set for last Friday was to deal with issuance of a permanent injunction.

Employers claim their case was strengthened because a provision in contracts has designated their associations sole bargaining agent with all sheet metal workers in the area.

An industry-wide meeting of member and non-member employers was scheduled for Thursday, July 25.

Carter Named--

(Concluded from Page 1, Col. 5)

Carter joined Kelvinator's shipping department in 1930. Four years later he moved to the order department supervising utility accounts, and in 1937 he was named office manager of the ice cream cabinet division. He was a member of the field sales staff for six years before being named manager of ice cream cabinet sales in 1945.

Carter has served as chairman of the ice cream cabinet section of the Air-Conditioning & Refrigeration Institute, it was pointed out.

"King Zeero's" Sweet Water ICE BANKS offer ICE-CONCENTRATED Refrigeration for Air Conditioning

CONTINUOUS RIFLED GALVANIZED COILS
EXPANSION VALVE CONTROLLED

32°-34° COLD ICE WATER

DESIGNED FOR USE WITH: FREON METHYL CHLORIDE — AMMONIA

The "King Zeero" ICE BANK is designed for air cooling in Churches, Mortuaries, Theatres, Offices, Stores, Auditoriums, Factories, Clubs, Restaurants, etc. Ice Banks may be added to existing systems for increased capacity. The "King Zeero" ICE BANK is designed to deliver 32° to 34° F. sweet water for recirculation through secondary equipment. Design temperatures may be obtained with mixing valves.

MODEL A-7 "KING ZEERO" ICE BANK

CONSIDER THESE ADVANTAGES--

- DIRECTED COURSE OF WATER travels with "built-in" agitation.
- NO MECHANICAL AGITATION REQUIRED.
- LARGE WATER COMPARTMENTS spaced on 11" and 12" centers.
- 33⅓ EXTRA ICE CAPACITY safely attained with up to 300 G.P.M. water flow.
- ICE IS "BURNED OFF" PLATE COILS progressively, exposing prime and secondary surface for maximum flash cooling capacity.
- ICE THICKNESS automatically controlled - eliminates "freeze ups."
- 94 SIZES to fit space requirements. Other designs for special applications.

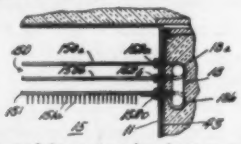
CAPACITIES - 500 lbs. to 30,000 lbs. (72,000 B.T.U.'s to 4,320,000 B.T.U.'s) in a single unit. Multiple units may be installed.

THE KING ZEERO COMPANY
4300-14 W. Montrose Ave. - Chicago 41, Ill.
Manufacturers of Ice Builders - Ice Builder Cabinets - Ice Banks

PATENTS

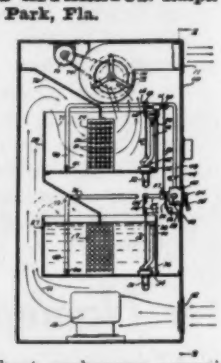
Week of June 4 (Concluded)

2,794,331. COOLING UNIT FOR ABSORPTION REFRIGERATION APPARATUS. Wilhelm Georg Kogel, Stockholm, Sweden, assignor to Aktiebolaget Elektrolux, Stockholm, Sweden, a corporation of Sweden.



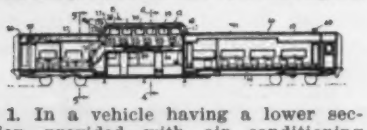
1. In a refrigerator having a cabinet provided with thermally insulated wall structure including inner and outer wall members and insulation therebetween, said inner wall member forming an inner liner of a storage space, refrigeration apparatus of the absorption type having a gas circuit comprising an evaporator element including conduit means in which refrigerant evaporates in the presence of an inert gas to produce a cooling effect, said conduit means between spaced apart regions in the lengthwise direction thereof having a horizontally extending section which is disposed outside the storage space and completely enveloped in the insulation of said wall structure and out of physical contact with the inner and outer wall members thereof. . . .

2,794,332. HEAT EXCHANGE METHOD AND APPARATUS. Ralph A. Boss, Babson Park, Fla.



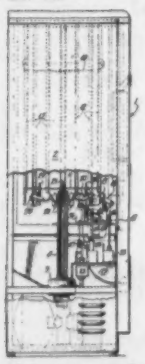
1. A heat exchanger comprising the combination with a refrigerating system including evaporator and condenser heat exchange surfaces, of separate tanks in which said surfaces are disposed, means for selectively filling and emptying said tanks with a first heat exchange fluid and control means therefor whereby when one tank is full the other is empty, and means for directing a second heat exchange fluid across the heat exchange surface in the empty tank for heat exchange therewith.

2,794,383. AIR CONDITIONING AND VENTILATING MEANS FOR VEHICLES. Lewis F. Reynolds, Philadelphia, Pa., assignor to Budd Co., Philadelphia.



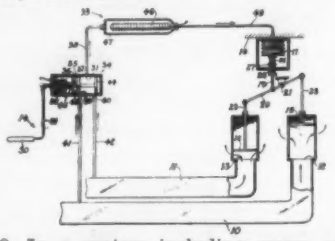
1. In a vehicle having a lower section provided with air conditioning means and a dome section having passenger seats disposed so closely adjacent to thin exteriorly exposed portions of a dome roof that the heads of passengers are disposed in a zone of heated air located immediately beneath the thin portions and subject to discomfort when the sun is shining brightly, in combination, means for supplying cool conditioned air to the dome section. . . .

2,794,384. VENDING MACHINE. Raymond H. Sierk and Raymond W. Sierk, Whitestone, N. Y.



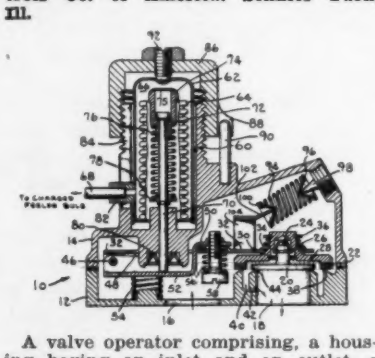
1. In a frankfurter sandwich vending machine, a cabinet including refrigeration, control and refrigeration equipment chambers, a supply magazine in said refrigeration chamber, means operable to contact and grip the ends of a frankfurter in said supply magazine, said means being connected to a source of electric power to cook said frankfurter through the resistance of the frankfurter to the passage of electricity, means to sever the ends of said frankfurter contacted by said contacting and gripping means, means to release the cooked and trimmed frankfurter sandwich from the supply magazine, and means to control the sequence and duration of operation of said gripping means, said severing means and said release means.

2,794,598. FLOW CONTROL APPARATUS. Robert W. Waterfill, Montclair, N. J., assignor to Buensod-Stacey, Inc., New York.



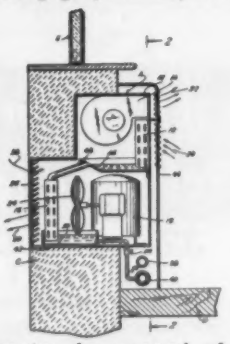
2. In a system including warm and cold air supply conduits and valve means controlling flow of such air through said supply conduits, the combination including a control device comprising a fluid actuated power unit energized by air withdrawn from each of the supply conduit, said power unit including a fluid pressure motor having a plunger connected with the valve means and biased by the pressure in the motor in one direction, adjustable resilient means biasing the plunger in opposition to the fluid pressure in said motor, a pilot valve having inlet openings for connection with the warm and cold air supply conduits and an outlet opening connected with the power unit for passing air to said unit. . . .

2,794,600. VALVE OPERATOR. Edward C. Ehlke, Milwaukee, Wis., assignor, by mesne assignments, to Controls Co. of America, Schiller Park, Ill.



A valve operator comprising, a housing having an inlet and an outlet, a pivot in said housing, a valve lever mounted on said pivot, a valve carried by the level and adapted to cooperate with the outlet in regulating flow from the casing, temperature responsive means including an element movable in response to temperature variations, a control lever mounted on said pivot and operatively connected to said element so the lever follows movement of the element, a spring connecting the levers to normally cause the levers to move in unison but allowing the valve lever to move toward or remain at the valve closed position independently of the control lever action.

2,794,624. APPARATUS FOR REMOVAL OF CONDENSATE WATER IN AN AIR CONDITIONING SYSTEM. Anthony Campagna, Riverdale, and John J. Campagna, Pelham, N. Y.

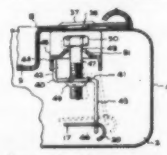


1. Apparatus for removal of water condensate in an air conditioning system comprising, in combination, an air conditioning system including an evaporator and a condenser, a steam heating system including a return pipe for the steam condensate, a receptacle arranged below the evaporator for collecting the water condensate from the evaporator, a connection for flowing said water condensate over the condenser, a receptacle arranged below the condenser for collecting the residue condensate water therefrom, and means connecting the second mentioned receptacle to said steam condensate return pipe for discharge of the condensate water to and through the steam condensate return pipe.

Week of June 11

2,795,015. ADJUSTABLE DOOR BRACE CONSTRUCTION. Thomas P. Foley, Louisville, Ky., assignor to General Electric Co.

1. In a door for refrigerators or the like including an outer shell, two diagonal cross braces extending between opposite corners of said shell, and mounting members for said braces secured to said shell at the corners thereof, means for adjustably securing said cross braces between said mounting members, said means comprising for each of said cross braces a bracket supported from one mounting member

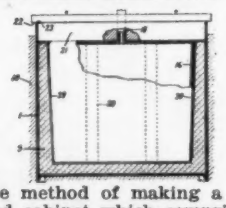


thereof and mounting one end of the brace, and means securing the other end of said brace to the other mounting member thereof, said bracket having a body portion and first and second oppositely extending legs, said first leg engaging said one mounting member and said second leg being attached to said one end of said brace. . . .

2,795,019. REFRIGERATOR SEALING GASKET. William R. Royall, Jr., Erie, Pa., assignor to General Electric Co.

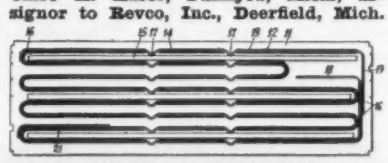
A sealing gasket for a refrigerator comprising a cabinet member and a door member, said gasket being composed of resilient material and including a tubular striking bead including a flat bearing portion adapted to engage a surface of one of said members and a striking portion to engage the other of said members in sealing relationship, said striking bead normally having a kidney-shaped cross section having a major axis thereof extending from said bearing portion and remaining substantially perpendicular to the plane of said bearing portion throughout the entire range of contact between one of said members and said striking portion. . . .

2,795,020. METHODS OF MAKING INSULATED CABINETS. Robert M. Kintz, Millcreek Township, Pa., assignor to General Electric Co.



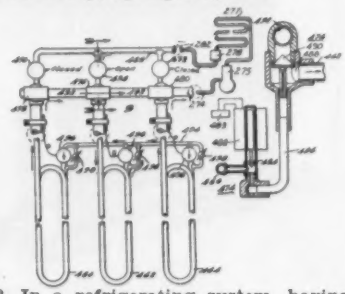
1. The method of making a vacuum insulated cabinet which comprises providing an inner liner and an outer case, shaping said inner liner to provide side walls inclined inwardly toward the bottom thereby forming a tapering plug structure, placing compressible heat-insulating material within said outer case adjacent the side walls and bottom thereof with the inner surface of the side walls of said heat-insulating material being inclined inwardly toward the bottom to provide a tapering receptacle for receiving said inner liner, the inner dimensions of said tapering receptacle being substantially less than the outer dimensions of said liner. . . .

2,795,035. METHOD OF MAKING A REFRIGERATED CABINET LINER. Clare H. Kafer, Palmyra, Mich., assignor to Revco, Inc., Deerfield, Mich.



2. A method of making a sheet and tube heat exchanger which comprises bending a length of metal tubing into a serpentine coil having a plurality of straight parallel runs interconnected by return bends all lying in substantially the same plane, positioning the coil on a plane sheet of metal, interposing between the coil and sheet a layer of synthetic resin adhesive, positioning against the coil side of the sheet substantially incompressible spacer bars having a thickness less than the nominal diameter of the tubing, subjecting the coil and sheet to pressure sufficient to flatten the coil to a dimension, in a direction perpendicular to the sheet, equal to the thickness of the spacer bars, and concurrently heating the coil and sheet to set the adhesive.

2,795,112. PLURAL EVAPORATOR REVERSAL CONTROL MECHANISM. Glenn Muffly, Springfield, Ohio.



2. In a refrigerating system, having a main suction conduit and a main liquid conduit, a plurality of heat exchangers each arranged to serve at one time to evaporate refrigerant at low pressure and at another time as a heating device heated by high pressure refrigerant, means for modifying the path of refrigerant flow in said system to cause said heat exchanger to shift from one to the other of said functions, the last said means including power actuated valve means for stopping the flow of high pressure refrigerant to one of said heat exchangers which is being heated while allowing refrigerant liquid to continue flowing from it to evaporate in another evaporator. . . .

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Copies should be ordered by number and title and a mention of the fact if they are either Designs or Reissues.

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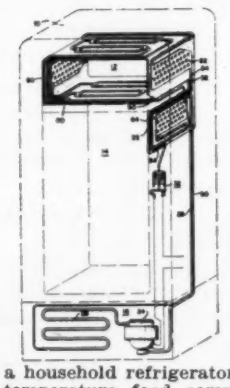
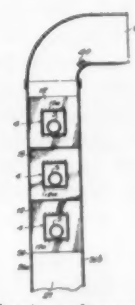
2,795,113. REFRIGERATING APPARATUS. Clifford H. Wurtz, Dayton, Ohio, assignor to General Motors Corp., Detroit.



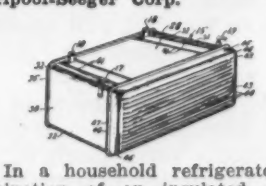
1. In a household refrigerator having a low temperature food compartment and a relatively high temperature food compartment, evaporator means for refrigerating said compartments, said evaporator means comprising a one-piece roll-forged plate evaporator having a first section located in said low temperature compartment and having a second section located in said relatively high temperature compartment and connected to said first section by means of a relatively narrow neck portion, and means for supplying liquid refrigerant to said sections in series.

2,795,114. HEAT EXCHANGE DEVICES. Herman W. Kleist, Hollywood, Ill., assignor to Dole Refrigerating Co., Chigaco.



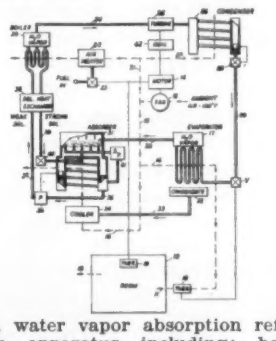
1. In a heat exchange structure for cooling air and the like, an air duct, a plurality of finned eutectic heat exchange structures arranged in said duct, each such heat exchange structure having a longitudinally extending housing having walls providing an elongated gas-tight container, a refrigerant duct extending longitudnially through said container having an inlet and an outlet adapted for connection in a system for circulating a fluid refrigerant, and a plurality of parallel free-edged fins lying in planes transverse to the longitudinal extension of the housing and in heat transfer relation with the walls of the housing. . . .

2,795,116. EVAPORATORS FOR HOUSEHOLD REFRIGERATORS. William B. Herndon, Jr., Evansville, Ind., assignor, by mesne assignments, to Whirlpool-Seeger Corp.



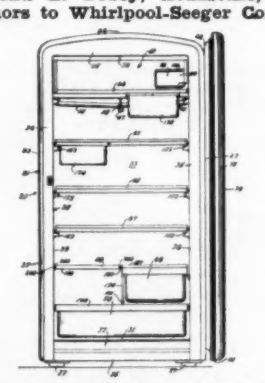
3. In a household refrigerator, the combination of an insulated cabinet provided with an outer shell and an inner liner separated by insulation, said liner forming a food storage space, and an evaporator carried by said liner and comprising a box-like sheet metal member provided with a rear cover, said evaporator being provided on its outside with one continuous length of tubing sinuously arranged on the bottom, one side, and top of said evaporator, a tubular header of enlarged cross section carried by the rear wall of said evaporator and extending diagonally from one lower corner to the diagonally opposite upper corner, the said header being connected to said tubing at the bottom of the header and being connected to the tubing also at a point adjacent the top of the header. . . .

2,795,115. ABSORPTION REFRIGERATION. Emerson L. Kumm, Pacific Palisades, Calif.



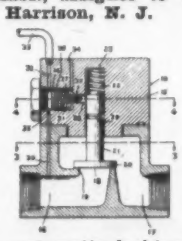
1. A water vapor absorption refrigeration apparatus including: boiler, condenser, evaporator, and absorber components; fan means for circulating ambient air to said components, said apparatus employing basic hydroxide solutions as the absorption medium whereby sufficient temperature differences between said absorber and environmental air exist for said fan blown air solely to cool said absorber; means for heating air passed to said boiler; and means for cooling air passed to said absorber.

2,795,117. HOUSEHOLD REFRIGERATORS. William B. Herndon, Jr., and Raymond E. Tobey, Evansville, Ind., assignors to Whirlpool-Seeger Corp.



1. In a household refrigerator, the combination of an insulated cabinet having an outer shell, an inner liner, and insulation between the liner and shell, said liner and shell being open at their front ends and having a breaker strip assembly enclosing the space between the edges of the liner and shell about the door opening, an insulated door having a seal for closing said cabinet, and an evaporator in the upper part of said cabinet for cooling the food storage space in said cabinet and providing a freezer chamber for ice cubes, comprising a sheet metal member formed of a pair of sheets roll-forged together, the said sheets being substantially L-shaped in pattern and having conduits between said sheets. . . .

2,795,238. NON-PULSATING CHECK VALVE. Sylvan B. Hirsch, Longmeadow, Mass., assignor to Worthington Corp., Harrison, N. J.



2. In an automatic locking and unlocking device for a check valve including, a valve disc for controlling the flow of fluid therethrough, a disc stem having a notch therein connected to the valve disc, and a first tension means for maintaining the valve disc normally seated, said locking and unlocking device comprising latching means disposed in the check valve transversely of the longitudinal axis of the disc stem and adapted to engage with the disc stem notch when the valve disc is unseated, a second tension means coacting with the latching means to normally prevent said enlargement, and a conduit connected to transmit the pressure of fluid flowing to the valve disc to the said latching means. . . .

2,795,239. CONTROL APPARATUS. Donald P. Eckman, Ithaca, N. Y., and Joseph G. Horn, Drexel Hill, Pa., assignors, by mesne assignments, to Minneapolis-Honeywell Regulator Co.

1. An air controller for effecting two position control with an adjustable differential gap, comprising a casing

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For more information about products advertised on this page use Information Center, page 18.

PATENTS

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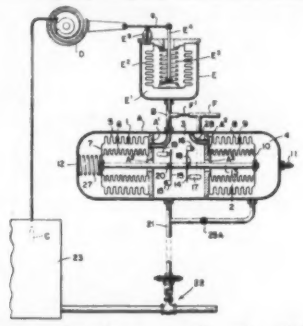
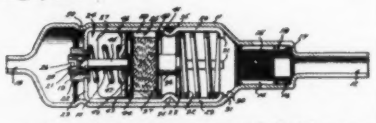
body and stationary partition walls and movable partition walls forming separate input, output, third and fourth



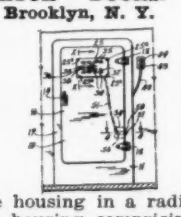
pressure chambers, each of which chambers has a movable wall portion formed by one of said walls, means for maintaining an input pressure in said input chamber which varies in accordance with changes in a controlled variable, valve means adapted when adjusted in one direction or in the opposite direction to respectively admit air under pressure or to vent air from said output chamber, movable valve operating means. . . .

2,795,381. LIQUID REGULATING VALVE. Samuel G. Eskin, Chicago, Ill., assignor to The Dole Valve Co., Chicago, Ill.



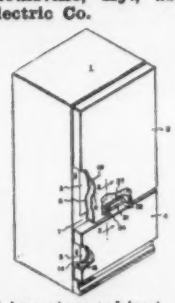
1. In a thermally operated fluid regulating valve, an elongated tubular valve housing havin an inlet at one end thereof and an outlet from the opposite end thereof, a retainer within said housing having a base extending across said housing adjacent the outlet end thereof and having an orifice member carried by said base having an orifice leading therethrough, said retainer having spaced stakes extending along said housing. . . .

2,795,639. BUILT-IN RADIO REFRIGERATOR DOORS. Alexander Rawson, Brooklyn, N. Y.



A wire housing in a radio-refrigerator, said housing comprising a hollow receptacle within the refrigerator door frame, a main body, electrical wires in said refrigerator adapted to connect to an electrical outlet and to a radio, aligned apertures in said door frame receptacle and main body when in closed position, insulation means secured in said main body and slidably received in the apertures in said door frame and said receptacle, said insulation means comprising a flexible tube extended into said receptacle and secured in the apertures in said main body. . . .

2,795,691. ILLUMINATED REFRIGERATOR COMPARTMENT. Douglas A. Solley, Jr., Erie, Pa., and Julius B. Horvay, Louisville, Ky., assignors to General Electric Co.



1. A refrigerator cabinet comprising upper and lower storage compartments having separate access openings, a partition wall between said compartments having a forward portion providing a mullion between said access openings, upper and lower doors for respectively closing said access openings having adjacent, normally-coextensive edge portions overlapping said mullion, an electric lamp including a switch therefor mounted in the lower edge portion of said upper door for illuminating the interior of said lower compartment. . . .

DESIGNS

180,443. ROOM THERMOSTAT. Henry Dreyfuss, South Pasadena, Calif., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis.

Servicing Automobile Air Conditioners

(Vol. 2)

BY C. DALE MERICLE

In response to numerous requests, the NEWS has resumed the popular series on automobile air conditioners. Latest models (1956 and/or 1957) of makes covered in the earlier articles, plus additional ones, will be included in this new series, which will describe units of leading "independent" producers as well as automobile manufacturers.

This series, which began in the June 24 issue, opened with a discussion of the A.R.A. auto air conditioner. The current instalment concludes the discussion of Frigette units.

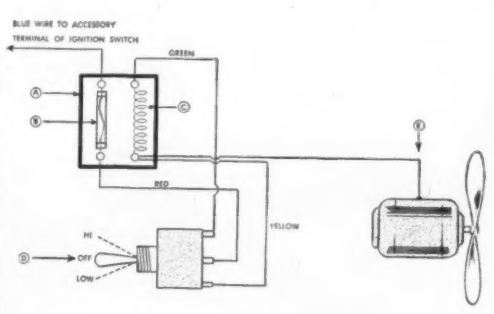


FIG. 5—Wiring diagram of 1956 "Frigette" fan. (A — fuse block; B — fuse; C — low speed resistor; D — fan toggle switch; E — fan motor with internal ground).

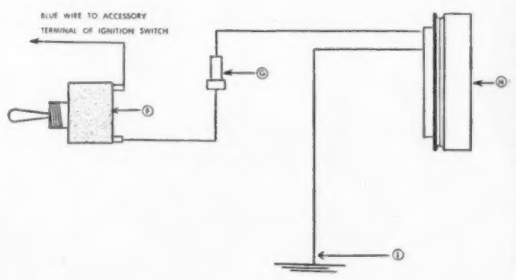


FIG. 6—Wiring diagram of 1956 "Frigette" clutch. (F — clutch toggle switch; G — fuse holder; H — magnetic clutch; and I — ground to engine block).

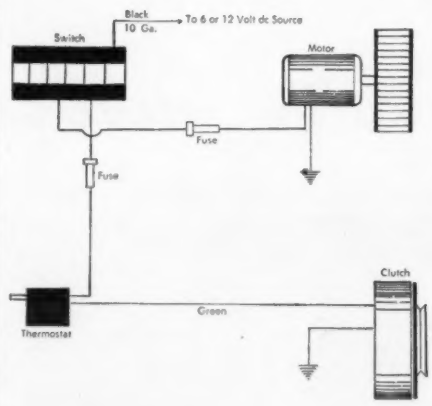


FIG. 7—Wiring diagram of 1957 "Frigette."

FRIGETTE (2)

Frigiquip Corp.
3724 N. May Ave.
Oklahoma City, Okla.

Wiring

Wiring diagram for blower on 1956 Frigette units is shown in Fig. 5. Note that fuse block for blower is located on rear of case.

Wiring diagram for magnetic clutch on 1956 Frigette is shown in Fig. 6. Note that an in-line fuse is employed for the clutch.

The 1957 Frigette wiring diagram for both blower and clutch is shown in Fig. 7. Shown in Fig. 8 is a pictorial wiring diagram of rear view of pushbutton switch in the 1957 model.

SERVICE HINTS

Evacuating System

The system must be evacuated following initial leak testing and before charging.

Some Refrigerant-12 must be admitted to system to permit checking leaks with a halide torch. After leaks have been detected and repaired, the system is evacuated. To do this, the manufacturer recommends running the car engine at fast idle for 10 minutes until air stops flowing out of discharge valve gauge port.

Charging System

Frigette units are charged through the low side in the conventional manner.

Correct charge is 2 lbs. of Refrigerant-12 in both the 1956 and 1957 models.

Trouble Chart

The following will serve as a guide in checking service complaints on 1956 and 1957 Frigette conditioners:

No cooling.

This can be caused by one of, or a combination of, the following:

1. Drive belt broken.
2. Fuses blown in fan or magnetic clutch circuits.
3. Loose electrical connections.
4. Fan motor failure.
5. Magnetic clutch failure.
6. Loss of refrigerant charge.
7. Evaporator blocked by ice.
8. Expansion valve plugged by ice, foreign matter, or otherwise inoperative.
9. Lines restricted.
10. Compressor failure.
11. Thermostat failure (1957 models).

Insufficient cooling.

This complaint can be the result of one of, or a combination of, the following:

1. Drive belt slipping.
2. Clutch slipping.
3. Shortage of refrigerant.
4. Overcharge of refrigerant.
5. Loose electrical connections.
6. Condenser air passages blocked by dirt, bugs, etc.
7. Compressor service valves partially closed.
8. By-pass valve defective (1956 models).
9. Thermostat defective (1957 models).
10. Lines restricted.
11. Expansion valve plugged.
12. Accumulator-drier plugged.

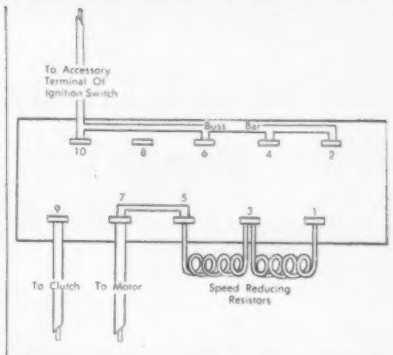


FIG. 8—Pictorial diagram (rear view) of pushbutton switch on 1957 "Frigette."

(Next instalment will deal with auto air conditioners manufactured by Frigikar Corp.)

AT YOUR WHOLESALER
KESCO AUTOMATIC CONDENSATE WATER DISPOSAL PUMPS
MODELS FOR ALL AIR CONDITIONERS ICE CUBE BINS DRINKING FOUNTAINS
Mfg. & Guaranteed by
Kesco Products
EST. 1944
P.O. Box 84
SPRINGFIELD GARDENS 13, N. Y.

GET MORE FOR YOUR MONEY BUY THE BEST KESCO PUMPS

Reprints Available

Hermetic Compressor Design, Development, by Henri Soumeral. Only 40¢ each.

Mail this ad with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

SALES, PROMOTION and application engineer. 21 years' experience at dealer, contractor, wholesaler, manufacturer and teaching levels of refrigeration, air conditioning and heating. Excellent success in public speaking for products promotion and instruction work. Fully qualified, dependable and references. Present location West Coast. BOX A5837, Air Conditioning & Refrigeration News.

RESEARCH AND development engineer—Fully qualified to direct research, design, development and testing (also to follow through to successful production) cabinets, compressors, systems and complete products for household refrigerators, low temperature cabinets and air conditioners. Experience gained and ability proven with leading companies in the industry. Hold several patents and Bachelor of Science degree in Mechanical Engineering. Member of Tau Beta Pi and A.S.R.E. Presently employed. Seek permanent position preferably with firm located on west coast. BOX A5842, Air Conditioning & Refrigeration News.

EMPLOYED SALES manager with 10 years' experience in sales and engineering with refrigeration and air conditioning coil manufacturer seeking opportunity as direct factory representative on salary and incentive basis in New England states. Age 35, married. BOX A5843, Air Conditioning & Refrigeration News.

SERVICE ENGINEER desires to locate in Arizona or California. 10 years' experience. Thorough knowledge of all types refrigeration equipment, commercial and domestic. BOX A5844, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

CHIEF ENGINEER Heat-X, Inc.—Must be experienced in design, development and application of heat transfer equipment in the air conditioning and refrigeration fields. If you are young in ideas, eager to carve a career in closely-knit division of dynamic, expanding organization, this position offers the opportunity you've been seeking. All employee benefits, pleasant suburban area. Send complete resume to Alan S. Decker, Vice President, Engineering, DUNHAM-BUSH, INC., South Street, West Hartford, Conn.

AIR CONDITIONING engineer—Minimum 5 years' experience on equipment up to 2 h.p. to handle product from inception thru production. A real opportunity with a small company. Send resume to: A. E. Reiss, REMINGTON CORPORATION, Auburn, New York.

MANUFACTURER'S REPRESENTATIVE for Royal-Aire a line of residential air, and water cooled, air conditioning equipment with furnaces to match in both gas and oil. Sizes from 2 to 7½ h.p., plus commercial units both water and air cooled from 3 to 20 tons. Reply in confidence to ROYAL-AIRE, c/o E. B. Smith Incorporated, 1311 Robin Road, St. Petersburg, Florida.

FAST GROWING manufacturer of environmental equipment requires manufacturer's representatives. Line includes low temperature cabinets, humidity chambers, and special chambers for environmental work. East, South, Middle West and West Coast territories available. Write giving full details about your organization. BOX A5834, Air Conditioning & Refrigeration News.

SALES ENGINEER for Chicago territory. One of nation's oldest and best-known manufacturers of commercial and industrial air conditioning and refrigeration equipment has opening for direct factory representative to sell wholesalers and manufacturers. Salary, expenses, excellent opportunity. Write in confidence. Give complete resume of self, including education, experience, family status, and age. Enclose photo if convenient. State salary requirement. Interviews in Chicago will be arranged. Write BOX A5838, Air Conditioning & Refrigeration News.

DISTRICT SALES manager—Large nationally known manufacturer of a complete line of condensing units and all popular size packaged air conditioners, residential and commercial. Permanent position, salary, car, expenses, commission. Must be willing to travel well established territory, part of Alabama, Georgia and Florida. Dealer contacts. Experience in this field necessary. State age, education, past connections first letter. All of our employees know of this ad. BOX A5841, Air Conditioning & Refrigeration News.

GRADUATE METALLURGIST or metallurgical engineer with a least 10 years' experience for product development. Preferably with refrigeration background. Company located in a small town in Ohio in the Miami Valley area. Replies will be kept in utmost confidence. BOX A5845, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

3-TON WORTHINGTON model "RWR" basic cooling cycles, new in factory crates. Available due to A. O. Smith Co., change in models. Substantial savings below jobber cost. S. M. DAVIS, 510 LaSalle Street, St. Louis 4, Mo.

AIR CONDITIONING equipment: Real bargain in air cooled self contained units new, in original crates. 3 ton $250.00, 2 ton $175.00. Call or write TEMTRON MEMPHIS CO., INC., Memphis, Tenn.

BUSINESS OPPORTUNITIES

AIR CONDITIONING sales and service building; stock, fully equipped shop. Located in metropolitan New Jersey. $25,000. Priced for quick sale. Write BOX A5835, Air Conditioning & Refrigeration News.

MISCELLANEOUS

ATTENTION SERVICEMEN: Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR, 2833 Lincoln Avenue, Chicago 13, Illinois.

'King Midas' Club

Contractor's Employes Learn Investment Principles with Only $10 Monthly Outlay

By George M. Hanning

CHICAGO—A project that is paying intangible dividends to the Accurate Heating & Cooling Corp. here is a "King Midas" stock investment club here among its employes and their friends.

The club was organized early this year to teach members how to invest their savings wisely and to enable them to do so.

The 30 club members each put $10 a month into the club. The combined total is invested into a common stock of this choice, selected by majority vote, explained Martin O'Neill, construction superintendent for Accurate and president of the club.

The majority of the members are service and installation men and office workers at the refrigeration, heating, and air conditioning contracting firm. The remainder are wives, husbands, relatives, and friends of employes.

Investment Broker Acts as Instructor

The club gathers one evening a month in the company office. One member, who is an investment broker by profession, has acted as instructor and guide to the group.

At the first meetings of the club, the broker, James F. Sears of A. C. Allyn & Co., explained how to pick a stock for investment, what factors in the company's balance sheet to look at, what various investment terms mean, and how they should be interpreted.

To each meeting Sears has brought a report on two or three companies in a particular field, such as banking, utilities, railroads, insurance, whose stock is to be considered for investment.

All of the companies represent excellent investments with long term possibilities. They are called "growth stocks," the only type in which the club will put its money.

Sears explains something of the field in which these companies operate. He outlines the financial position of each, its financial history, its prospects for future development, and how each company differs from the others.

Club members then ask pertinent questions about the companies to clarify points which they do not understand or to get additional information. Then they vote to determine whose stock the club will purchase.

Get Progress Report On Early Investments

At each meeting they hear a progress report on the stocks previously purchased. Profit and/or loss on the club's previous investments are tallied.

Recently the club set up a revolving committee to conduct its own stock investigations. The committee will report to the group regularly on its findings.

George Howe, president of Accurate, is not a member of the club. He said he stayed out so as not to sway its decisions. However, his daughter and son-in-law are members.

Though the club has been in existence for only six months and the company has no direct connection with it (the club cannot invest in company stock), Howe enthuses over the advantages it offers the firm and its employes.

May Help Keep Key Personnel

"This idea has caught the imagination of the employes as nothing else has," he declared. "It gives them a new common basis for cooperation among themselves. It has brought improved relations between departments and has resulted in a smoother functioning of the company. I believe it will be influential in retaining key personnel.

"By teaching the employes how economic factors such as tight money, government regulations, and taxes can affect their investments, they get a new appreciation of the business climate their own company is operating in.

"They also learn how new developments and anticipated developments—such as the St. Lawrence Seaway project, for instance—can affect the fortunes of a business.

"With their own money invested, they become much more interested in the business world. Today, you will find our servicemen and office workers pouring over the financial pages of the daily newspaper—a section they hardly knew existed before—during their spare time."

The club is a good thing for the employes themselves, Howe believes. "This is one way they can beat inflation," he observed.

Hotpoint--

(Concluded from Page 1, Col. 5)

needs will be made during the next five to ten years. Among these will be an air conditioning plant and a TV-producing facility, it was reported.

He said any new facilities that may be constructed on the property will be used to supplement manufacturing facilities now operated by Hotpoint in Chicago, Cicero, Milwaukee, and Chicago Heights.

The company has no plans to close or move from present factory and office locations, Sharp stated. These relatively new and efficient plants will be retained in the foreseeable future, he said.

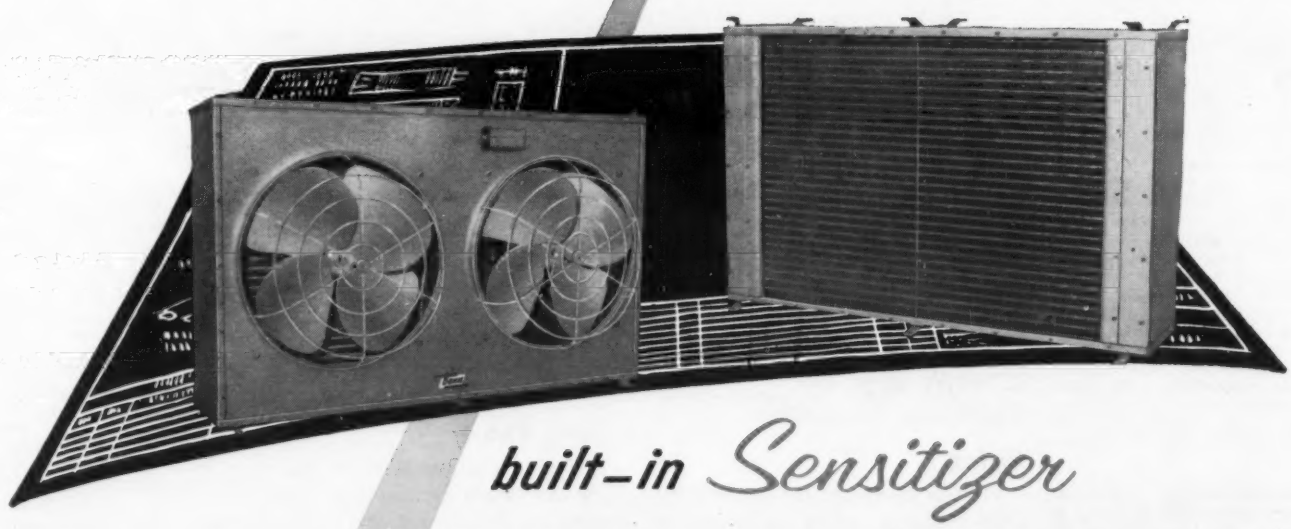
Top executives attending a press conference last week represented other companies connected with the Hotpoint transaction.

They included Ben W. Heineman, chairman, and Clyde J. Fitzpatrick, president, Chicago & North Western Railroad; Willis D. Gale, chairman, Commonwealth Edison Co.; Tom Lively, president, Centex Construction Co., Dallas; Charles A. Hodlmair, president, Village of Elk Grove; George L. Irvine, commercial vice president, General Electric Co.; and Tom H. Coulter, Chicago Association of Commerce & Industry.

Following Sharp's announcement, Lively announced that Centex has bought 720 acres directly east of Hotpoint's property and will develop this acreage into a new Centex Industrial Park.

Lively said Centex' property which includes 1,500 acres now under residential development, plus the 720 acres just announced, plus Hotpoint's 770-acre tract, compromise what is expected to be the largest residential-industrial development ever planned.

BOHN Presents the NEW ANGLE in Air-Cooled Condensers



built-in Sensitizer maintains proper head pressures

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